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MONEY OF THE AMERICAN COLONIES AND CONFEDERATION:
A NUMISMATIC, ECONOMIC AND HISTORICAL CORRELATION

by

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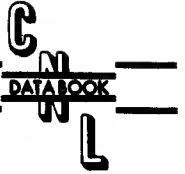
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FOR
CNL PATRONS



"The whole story of the rebellious Colonies is a story which relates more to monetary contentions and principles than to any other subject."

Alexander Del Mar (1899)

Sequential page 964



The quote on the title page is from Alexander Del Mar, The History of Money in America (New York, 1899), page 74, hereafter cited History of Money.

Pictured on the cover is the most common copper coin to have circulated in the American Colonies and Confederation, the counterfeit English halfpence made in England and imported here in great quantities. This particular piece is further illustrated in Plate IX, Figure 2, page 75.

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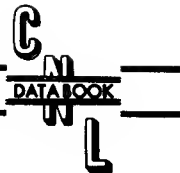
PREFACE

Two hundred years ago the first copper coins of the American Confederation were issued. This book is the result of my research into the coinages of Connecticut, Vermont, New Jersey, New York, and Massachusetts prompted by a curiosity concerning these interesting copper issues. My fascination almost became an obsession to learn all I could about them. I was particularly intrigued by the very brief life span of these series and why they disappeared so soon. It rapidly became apparent to me that this numismatic history, to which I was so attracted, did not occur in an isolated era but rather followed an evolutionary sequence from earlier colonial and Revolutionary times and was destined to blend into the Federal period. In 1980, I systematized my newfound knowledge about the Confederation coppers in a brief monograph which I shared with some colleagues who offered some very constructive criticisms. This current work is completely rewritten to include those suggestions and to incorporate new materials I have found in a continuing study of this subject. It is my present intent to share these findings with other numismatists who belong to the small fraternity of serious collectors and students of early Americana. I can claim little of this material as original with me, but rather it is a review, compilation and synthesis of the writings and formulations of other numismatists and historians. I hope that my presentation will stimulate others in this area of early American numismatics and become the catalyst for further dialogue and research.

I have endeavored to describe and analyze the coinage, particularly the "small change" that jingled in the purses of the American colonists from the very beginnings up through 1789. The rationale for inclusion of much of the material in the earlier chapters is to present the background and introduction for this general theme. The major emphasis and the focal point of the book, of course, concerns the copper coinages of the Confederation period, curiosity about which provided the initial stimulus for the entire research. I do not discuss paper currency in detail except in the overall context of the prevailing economy. This decision should not infer that colonial paper money is not important, but rather that the author does not have a specialized knowledge of the subject. The role of small denominational paper should not be underestimated in the overall colonial monetary scene.

This book emphasizes the fact that numismatics is not limited to the study of the particular characteristics of a selected series of coins but rather requires an appreciation and interpretation of contemporary economic and political history during the era in which the coins were current as money. This reality is reflected in the selection of the title, Money of the American Colonies and Confederation: A Numismatic, Economic and Historical Correlation. The word "correlation" in its meaning "a relation of invariable accompaniment," keynotes this holistic approach to numismatics which is nicely expressed by Gabriel Calbeto de Grau (1).

1. Compendio de las Piezas de Ocho Reales (San Juan, 1970), Vol. I, 12.



Numismatics enjoys world-wide popularity because its technical phase is a Science and its aesthetic phase an Art. It is closely related to History, Geography, and Economics (all of these being major influences on it), as well as such specialized areas as sculpture, Metallurgy, Chemical analysis, and Photography. Both the imaginative mind of the artist and the analytic and disciplined mind of the scholar may find relaxation and pleasure in studying the marvelous elements that make up modern Numismatics.

De Grau omitted from his definition the technical aspects of minting, an aspect central to the study of early American coinages. In regard to "early American coinages," James C. Spilman adds, "we have the added attraction of a great deal of personal history of the coiners and promoters that can be integrated into the Science and Art aspects; and especially their futile attempts to make a profit from the coinage of copper!"(1)

In my earlier readings, I naively overlooked the fact that the coins I was studying were once money, and as money they circulated in commerce. Within the colonial and later Confederation periods, such circulation of currency was influenced by variable exchange rates and other economic pressures which varied from place to place and from time to time. It requires an appreciation and knowledge of these exchange rates and other monetary influences to answer many of the questions generated about the coins encountered in the period under study. In the preparation of this monograph, I received much help and encouragement from John J. McCusker, Professor of History at the University of Maryland. His work, Money and Exchange in Europe and America, 1600-1775, A Handbook (2), is an excellent resource for providing insights into the circulation of currency, the function of specie, exchange rates, bills of exchange, and moneys of account, during these times. In my interpretation of numismatic history, I have placed much emphasis on the economic issues surrounding the circulation of the currency under discussion. Although I make no pretense to understand it all, an acquaintance with these facts provides the vital links between numismatics, history, economics, and commerce in general. A more recent work by McCusker, in conjunction with Professor Russell R. Menard of the History Department at the University of Minnesota, The Economy of British North America, 1607-1789 (3), fully interprets the early economic history of our country and provides a basis for an in depth numismatic survey.

One controversial question which I frequently encountered in my research was whether or not there was an adequate hard money supply during this period. I have attempted to examine this issue objectively and reconcile the divergent opinions.

My research and analysis has not brought forth any startling revelations, but a few additions or "re-discoveries" to our knowledge have been made. As

1. Personal communication, March 17, 1986.

2. (Chapel Hill, N.C., 1978), hereafter cited Money and Exchange.

3. (Chapel Hill, N.C., 1985), hereafter cited Economy.

noted on the cover, I am firmly convinced that numismatists have lost sight of the fact that the most common copper of the period has been ignored by all except for a few writers. The counterfeit English halfpence, including those manufactured in America as well as those imported from England, formed the bulk of the small change medium, a fact confirmed repeatedly in contemporary newspaper accounts. Since Colonial America lacked a uniform coinage, it can be accurately stated that any world coin of the period could have shown up and circulated in the colonies and probably did at one time or another. The recovery of such pieces in old accumulations or hoards is to be anticipated, but unless found in sufficient numbers, it does not imply that these issues formed a significant portion of the colonial currency, hence their appearance in America is inconsequential to our study. This is reminiscent of Maine humorist Tim Sample's assertion that just because your cat has her kittens in the oven, it doesn't mean they are biscuits! I have listed those coins which are properly included as an American currency when such a conclusion is supported by historical evidence.

Another area of great personal interest deals with overstruck coins. When I obtained my first New Jersey "camel head" struck over a Connecticut 1787 copper, I was fascinated and astounded at such a practice. I have delved into this subject at great length and now understand quite clearly the purpose of such a seemingly irregular activity. Appendix II lists all recorded overstruck coins of which I am aware. If this tabulation can be enlarged by any readers, such additions would be appreciated. Also I read all available newspapers from the summer of 1789 which provided me many new insights into the collapse of the copper medium which I have shared in Chapter Eight. My analysis of the die varieties of the Constellatio Nova (1) coppers may add further understanding about their circulation in America. The major theme on which I have concentrated throughout this book is that the coins I've described were once money and as such circulated as the currency of the period. An understanding of their function as currency combines many otherwise loose and seemingly unrelated facts into a coherent perception of early American money.

There are many other people to whom I owe a debt of gratitude for their prior works and research which I used in my correlation and synopsis of this subject. While all of these individuals are cited in the footnotes and appear in the bibliography, there are three important works which deserve special mention. The first of these is, of course, Sylvester S. Crosby's classic, The Early Coins of America, first published in 1873 and made available to modern readers in reprint form by Quarterman Publications (2). The next most important single reference is the 1976 American Numismatic Society publication, Studies on Money in Early America, featuring monographs by distinguished scholars on many aspects of colonial numismatics on which I

1. Persuasive evidence is given that this is the proper name for this interesting coinage, not Nova Constellatio (see Walter H. Breen, "Constellatio Nova", The Colonial Newsletter (Huntsville, Alabama), 453-454).
2. (Lawrence, Mass., 1974), hereafter cited Early Coins.

have attempted to expand (1). The list of contributors is a Who's Who of experts and this book should be in every numismatists' library. Additionally every student of this period should be familiar with The Colonial Newsletter Foundation, Inc. of Huntsville, Alabama, a non-profit organization which sponsors research and education in early American numismatics. Its publication, The Colonial Newsletter, edited by James C. Spilman, which features many outstanding contributions on this subject, was widely consulted and quoted in the preparation of this book (2).

I wish to acknowledge the help of others who assisted me in the production of this manuscript. The coin photography was done by John R. McGill, M.D. whose interest in my project was most appreciated. The statistical data on coin weights was performed by John A. Keefe, Ph.D. who guided me through this unfamiliar area. The style sheet used for the preparation of the footnotes and bibliography was provided by Professors John Potsdam and Judith Ranlett of the History Department of the University of New York at Potsdam. I am most grateful to Sanborn Partridge, James C. Spilman, Raymond H. Williamson, and Professor McCusker who critically reviewed the manuscript. Other helpful suggestions came from Richard August, and the late David Sonderman, Ph.D. Miss M. M. Archibald and Philip Attwood of the Department of Coins and Medals of The British Museum kindly made available photographs of the Antoninus Pius sestertius and the William III counterfeit halfpence. I am indebted to Thea Hottentot for the translation of the Dutch references. The American Antiquarian Society, through the courtesy of Georgia B. Baumgartner, Curator of Graphic Arts, and Joyce Tracy, Curator of Newspapers, supplied the bill of exchange and assistance with the early newspapers in their collection. This project could never have been accomplished without aid from the staff of the Library of the American Numismatic Association, the source of most of the literary materials. Other hard-to-find references were obtained for me by Charlotte Burley of the Interlibrary Loan Department of the Bangor [Maine] Public Library. The Folger Library at the University of Maine, Orono, was the source of the eighteenth century newspapers. An additional word of appreciation is required for the coin auction houses and dealers whose published auction catalogues and fixed price lists are found in the footnotes and bibliography. These scholarly-prepared publications are a resource which contain a wealth of information, have made a significant contribution to the hobby, and have rightly become an integral part of the numismatic literature. We are indebted to these companies.

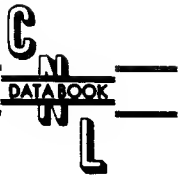
The manuscript was written on a Tandy™ 1000 Personal Computer using the Homeword) word processor and Homeword Speller). My wife, Mary, assisted with the typing and her forbearance during this five year labor of love is acknowledged and commended.

1. Eric P. Newman, editor, and Richard G. Doty, associate editor, (New York, 1976), hereafter cited Studies on Money.
2. P.O.Box 4411, Huntsville, Alabama 35802. The Colonial Newsletter is cited CNL and the pages are sequentially numbered.

I hope this book will be of help to others who share my passion for this period of history and numismatics. There are many gaps in our knowledge and we may be seduced into speculation about what might have been and make unwarranted assertions. I have intended to remain conservative, but no doubt have been guilty of perpetuating traditional inaccuracies or inventing some of my own. While writing this manuscript I heeded the warning of the eminent historian Joseph A Ernst; "To avoid a quagmire of unfounded generalities, the student of colonial currency must remain true to the facts, and prudent where there are none."⁽¹⁾ With this admonition in mind, the story begins.

1. Money and Politics in America, 1755-1775: A Study of the Currency Act of 1764 and the Political Economy of Revolution (Chapel Hill, N.C., 1973), 6, hereafter cited Money and Politics.

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THE ECONOMIC RELATIONSHIP BETWEEN ENGLAND
AND HER NORTH AMERICAN COLONIES

Although the impression is given of the early North American colonists as persecuted emigrants fleeing their homeland for religious and political reasons, this romantic view is not entirely accurate, since there were significant economic factors as well in the development of this new frontier. These colonies were a source of raw materials for English manufacturing and later a valued marketplace for finished goods. Any excess of American exports could be sold for profit by English merchants in Europe. This "general economic theory of colonization" is well summarized by Nettles (1), who described the consistent British policy whereby the colonies were expected to buy English goods for which they paid by selling raw products to England to supply her factories. "The trade should employ English merchants and vessels, thereby providing freights, profits and interest. These were the three pillars of colonial policy designed to support the mercantile edifice of state security and private profit."

This period of American economic history has been extensively reviewed in a recent book by McCusker and Menard, The Economy of British America, 1607-1789. They describe colonial economic development which corresponds closely to the "export-led," "vent for surplus," or "staples approach" model (2). Initially the colonies were sparsely populated, lacked capital, but had an abundance of raw materials. Such "resource-intensive goods" or "staples" were shipped to England in exchange for manufactured goods required in the colonies. The authors continue as they relate differences in the economic base and growth between the plantation-rich South and the developing frontier regions of the North.

This colonial trade policy and England's mercantile system were supported by various Parliamentary acts and regulations promulgated by the English Board of Trade, a governmental department concerned with the promotion of domestic and foreign commerce and the administration of colonial departments particularly in matters relative to the development, expansion, and protection of trade (3). The Acts of Trade and Navigation were a series of laws designed to exert a continued control over colonial commerce and raw materials by maintaining permanent colonial dependence on English manufactured goods and shipping (4). Prior to 1761, a total of 29 such laws were passed but many were difficult to enforce, virtually ignored, or

1. Curtis P. Nettles, The Money Supply of the American Colonies Before 1720, University of Wisconsin Studies in Social Sciences and History, Vol. 20 (Madison, 1934), 160, hereafter cited Money Supply. See also Evarts Boutell Greene, The Foundations of American Nationality (New York, 1922), 179, 182, hereafter cited Foundations.

2. 17-34, passim.

3. Greene, Foundations, 230-231.

4. Nettles, Money Supply, 160; Ernst, Money and Politics, 19.

effectively circumvented by experienced American smugglers (1). Although the Navigation Acts were designed to strengthen English mercantilism, the colonists also prospered under their structure since competition from rival Dutch merchants was removed (2). The stricter Navigation Acts following 1763 have been cited as a cause of the American Revolution due to the growing resentment of British restraint of colonial trade (3).

To maintain this colonial trade structure of mercantilism, local manufacturing and foreign trade with nations other than England had to be discouraged to prevent the "American plantations" from economic competition with the mother country and to ensure they remain subservient as a ready market for English goods and as source of raw materials. A negative trade balance soon developed since purchases by the colonies for needed manufactured goods exceeded credits derived from the sale of exported commodities. This imbalance affected the North more than the South whose exported agricultural products, tobacco and cotton, were a ready source of income (4). Inspection of Table I demonstrates New England's trade deficit as recorded in contemporary customs' reports.

TABLE I
Trade Deficit for New England with England;
English Customs' Records.
Data from Nettles, Money Supply, 139.

Periods	Average yearly purchases from England; imports	Average yearly sales to England; exports	Average yearly deficit
1698-1702	£ 92,200	£ 33,400	£ 58,800
1702-1706	62,750	26,750	36,000
1706-1712	121,000	33,000	88,000

Despite the figures presented in the above table, the degree of trade imbalance cannot be calculated with accuracy for several reasons (5). The customs' house ledgers which were the primary source of these data, failed to give the current price for the goods which cleared the ports. All values were quoted at levels current in the late 1690's and did not reflect price changes or the annual inflation rate (6). While customs' house records do not correctly state the actual price of merchandise which passed their portals,

1. Basil D. Henning, "Navigation Act", The World Book Encyclopedia (Chicago, 1970), XIV, 65.
2. McCusker and Menard, Economy, 46-50.
3. John R. Alden, "Revolutionary War", The World Book Encyclopedia (Chicago, 1970), XVI, 255.
4. Nettles, Money Supply, 136-141, 149.
5. McCusker and Menard, Economy, 73-78.
6. The annual inflation rate from 1620 to 1730 was 0.09 %, from 1730 to 1770 was 0.75 % (McCusker and Menard, Economy, 67).

such accounts do record the volume of trade. Another serious flaw concerning these colonial ledgers is that data were only collected for transactions with England and Wales and trade with all other destinations ignored. Income earned through the use of American ships also did not appear on these contemporary records. The profits derived from smuggling were considerable and, of course, these evaded official tabulation. While a negative balance of trade existed, it was not as severe as a first glance at existing customs' house files would indicate. The fact is that colonial commerce generally flourished despite periods of cyclic economic decline. No doubt there was a periodic scarcity of circulating hard coin for remittance to England for the purchase of imports, but a re-evaluation of American colonial balance of payments from trade with Great Britain, Ireland, Europe and the West Indies, including both "visible" and "invisible" or trade related (wages) incomes, discards "the traditional notion of a severe, chronic deficit for the colonies" since the annual imbalance was only in the range of £ 40,000 (1).

"The total quantity of money available to the colonists is unknown since contemporary or modern estimates are few and never include all forms of money."(2) The "available money" supply for local and foreign transactions was more than just hard cash at hand, but also included paper currency, commodities and the credit extended by English merchants (3). Calculations using the estimated per capita income from 1750 to 1775 suggest that the colonists had an adequate quantity of money. While there may have been sufficient gold for large transactions, the possibility exists of a shortage of smaller denominational currencies for daily business transactions. The question remains as to the actual extent of this hard money shortage and its impact upon colonial commerce. There is evidence that metallic currency, while rarely abundant, fluctuated in availability from place to place and from time to time, depending on the prevailing economic conditions. In the period around 1700 there was reported "a great quantity of Spanish money Plate and Bullion" available in Carolina, Pennsylvania, New York, and New England (4); "but these evidences of coin are accompanied by many complaints of scarcity."(5) There were definite times of economic expansion and stagnation within the colonial economy, particularly in post-war periods, which corresponded to similar activity within the English economy (6). Several periods of sluggish economy were more significant than others and influenced the colonial monetary status in ways which will be detailed in subsequent chapters. When hard money became scarce during a depression, there was clamoring from contemporary observers who decried the shortage of specie and the burden this placed on the public.

The earliest economic downturn occurred from 1638 to 1644, termed the

1. McCusker and Menard, Economy, 80-84.
2. McCusker and Menard, Economy, 338-340.
3. Ernst, Money and Politics, 356.
4. Charles J. Bullock, Essays on the Monetary History of the United States (New York, 1900), 15, hereafter cited Essays.
5. Nettles, Money Supply, 204-207.
6. McCusker and Menard, Economy, 60-70.

"first depression in American history," to be described in Chapter Two, appears to have been international rather than a local New England phenomenon. This period saw the start of a gradual "overvaluation" of silver currency which extended until the Proclamation of 1704. The subsequent depressions of 1650 to 1655 and 1662 to 1672 were following war with The Netherlands. The next three major periods of slump (1714 to 1716, 1751 to 1755, and 1764 to 1769) coincided with the end of Queen Anne's, King George's, and the French and Indian Wars, respectively (1). Conflict with England over colonial paper money policies flared during 1751 and 1764 with wide-reaching paper currency reforms in America which are topics in Chapter Four. Many later day historians looked at these hard times and attempted to blame these financial recessions on paper money practices in order to garner credence in support of their own personal opposition to that medium. Modern-day scholars have been more objective and have ascribed these currency fluctuations to world wide business cycles rather than local currency mismanagement.

An economic slowdown after the French and Indian War was the probable cause for the Massachusetts Council petition to the House of Commons presented in December 1768 which described the current circumstances in the Bay State (2).

The scarcity of money in the Colonies is owing to the balance of their trade with Great Britain being against them; which balance drains them of their money, to the great embarrassment of their trade, the only source of it. This embarrassment is much increased by the regulations of trade, and by the Tax Acts, which draw immediately from trade the money necessary to support it; on the support whereof the payment of the balance aforesaid depends. The exports of the Colonies, all their gold and silver, and their whole powers of remittance, fall short of all the charged value of what they import from Great Britain.

The last depression to occur within the time frame of this book lasted from 1784 to 1789 and equalled in magnitude the Great Depression of 1929 to 1933 in terms of decline of the gross national product (3). This period of economic stagnation during the post Revolutionary War period had significant impact on numismatic history and is covered in the last four chapters.

McCusker (4) summarizes this hard money "shortage" by suggesting that

Complaints about the "dearth of available coin" in the colonies should always be read with the added phrase supplied by the reader: "at a 'reasonable' price."

1. See footnote 2, page 44.

2. From Joseph B. Felt, An Historical Account of Massachusetts Currency (Boston, 1839), 159-160, hereafter cited Mass. Currency.

3. McCusker and Menard, Economy, 373-374.

4. McCusker, Money and Exchange, 124.

This is to state that hard coin could always be obtained but the question was whether the buyer was willing to afford the price. Since all foreign purchases did not require a specie transaction, hard money was not always essential for overseas trade. Nonetheless, the fact remains that there were numerous contemporary complaints recorded about inadequate stocks of silver and gold coin, but the accuracy of such lamentations may be difficult to assess because of the subjectivity of the speaker and the lack of complete records.

Rather than to ascribe to a chronic, unrelenting shortage of hard money, it appears that specie supplies fluctuated and that there was a maldistribution of hard money in favor of the merchant and business populations. When specie was thus unavailable for commerce, a relative shortage was induced. Small denominational coins were probably scarce and at a premium.

The same monetary situation was experienced outside the Thirteen Colonies; in Nova Scotia the government had to buy circulating medium, generally Spanish silver coins, on the open market to provide wages and payments (1). Merchants who possessed hard money were reluctant to spend it locally. This is further indication that hard money was available if one had the means to buy it with other currencies, and when one owned it, there was a tendency to hoard it or use it for foreign purchases. Thus while the quantity of money "circulating" in the community was limited, it was not impossible to obtain. Since those who held it, kept it, it was not so much an issue of quantity but of distribution. It was not an "absolute money shortage" but more of a "circulating money shortage."

How is this question to be resolved; was there an adequate supply of hard money for the colonists to conduct daily business? Writers of the past century would have certainly insisted that there was a troublesome shortage of gold and silver which was the root of many of the colonists' economic woes. Since it is human nature to complain about difficult times and take prosperity for granted, history is replete with subjective and anecdotal accounts of money shortages during a depressed economy. Modern historians have cited evidence for an adequate supply of specie whose immediate availability to those who could afford it was directly related to the prevailing economic cycle. During a period of expansion, hard money would have been more plentiful than during a recession when the colonists may not have had access to sufficient coin and would have had to resort to supplementation of the circulating money supply with some non-specie monetary instruments such as commodity moneys, paper currency and other substitutes to be described in the following three chapters.

Any shortage in America of hard coin for daily use could not have been alleviated by England even if she wished since her own coinage was in such a desperate condition. As a result of this situation, the exportation of specie

1. Winthrop Pickard Bell, The "Foreign Protestants" and the Settlement of Nova Scotia (Toronto, 1961), 343.

was outlawed, even to the colonies (1). The English colonies had no natural source of precious metals and depended on the wealth of the Spanish American mines from the profitable trade via the West Indies. Despite shortages of coin for daily commerce, the English government would never sanction the establishment of a colonial mint, or develop a uniform coinage system, except for the feeble attempt of the Proclamation of 1704 (q.v.). Thus the colonies were obliged to depend on foreign coin, especially Spanish American silver, as the source of circulating specie. Any coin which was received in trade was in such demand for foreign purchases, that it soon was remitted to the mother country and saw little circulation in the domestic economy (2). This periodic dearth of circulating hard currency was a chronic, continuing grievance of the American colonists and a theme central in the study of contemporary economic, political and numismatic history.

1. Nettles, Money Supply, 163, 166.
2. Nettles, Money Supply, 11-13; Ernst, Money and Politics, 20.

MONEY IN EARLY AMERICA: WAMPUM,
COMMODITIES, AND EARLY COIN

The definition of money, or currency, would be very restrictive if it only included "hard coin," or specie. Joseph B. Felt (1) in the introduction to his classic work, An Historical Account of Massachusetts Currency, asserted that

Currency, ... denotes whatever has been adopted, as a medium of exchange, by general consent and practice. ... It is well known, that substances, adopted as a medium of circulation or standard value, have been essentially different in various ages and nations. In Italy, the ancient mode of estimating articles of property, was by cattle. Hence, the word, 'pecunia', in their language, was from pecus, flock or herd; though it has long been translated, money.

Felt offered other examples through both the ancient and modern worlds as to how various materials including those "of the animal, vegetable and mineral kingdoms" served as currency in different countries during different eras.

Considering now this broadened definition of "money" or "currency," it is very easy to understand how the colonists responded to this lack of "circulating" coin, the term "circulating" used to exclude whatever specie might have been hoarded and unavailable for general commerce. The obvious answer of the colonists was to engage other forms of circulating media of exchange and engineer currency manipulations to increase the pool, or decrease the drain, of the available money so that domestic and foreign commerce could proceed other than by credit. This story continues as these various alternatives to hard coin are described, a very complex narrative with many details yet undiscovered.

The several tactics employed by the colonists to compensate for the shortage of hard coin and to increase the money supply are enumerated as follows:

1. adoption of indigenous Indian wampum;
2. barter of goods and commodities;
3. use of commodity moneys;
4. inflation of the value of available coin;
5. prohibition against the export of specie from the colonies;
6. illegal establishment of a domestic mint for silver coin; and
7. development of four systems of paper currency, namely, (a) commodity notes, (b) bills of exchange, (c) land-office (land bank) notes, and (d) bills of credit.

1. 10-11; See also a recent scholarly study by Dale K. Osborne, "Approaches to the Definition of Money", The Economic Review, March 1984, reprinted in The Numismatist, Vol. 97, 1625-1632, 1845-1851, 2075-2085.

Some of these alternatives were more local in scope than others, and while they appeared more or less in succession, some existed simultaneously "and the adoption of a later, perhaps more sophisticated device did not necessarily mean the abandonment of an earlier one." (1)

Circulating media other than hard coin are referred to as "money substitutes." (2) If we accept the definition proposed by Felt that "money" can be anything upon which we agree, it is inconsistent to speak of "money substitutes" for such items as wampum and commodities for which specific values have been assigned by popular consent. While wampum, commodities, and the like, may well be considered substitutes for "hard coin," they are, indeed, just another "species" of the genus "money," and are a currency in their own right (3).

Money is either "real" or "imaginary." In the colonial era, "real" money invariably referred to metallic coin, while "imaginary" money was a bookkeeping contrivance also called "money of account." Money of account does not exist per se as a tangible item of value, but is rather a "notational device" where disparate coinage systems can be reconciled into a single monetary standard (4). For example, in October 1672, the Spanish piece-of-eight reales was valued at six New York shillings (5). The piece-of-eight was an actual "real" coin, whereas the New York shilling did not exist except on paper. It was the local "money of account" or "New York money" in which the current value of the piece-of-eight could be reckoned in relationship to other coin money or other imaginary moneys. Money of account was also a useful vehicle for reconciling underweight or clipped coins because their relative values, based on actual weight of precious metals, could be established (6). While the colonial moneys of account used the same denominations as England, namely pounds, shillings, pence and farthings, the relative values of the several colonial moneys of account could be, and frequently were, different depending on the strength or weakness of the local economy of the particular colony in question. This inconsistency in value of real money from one colony to another, as expressed in the local money of account, was an aggravation which added significant complexity to intercolonial commerce. This disparity between the rates of exchange from one colony to another, and later between the several states, was a frustration which existed until the early Federal period.

Money is further defined as to its intrinsic worth (7). "Fiduciary" coinage is money whose monetary value exceeds the value of the contained

1. McCusker, Money and Exchange, 117.
2. J. Earl Massey, "Early Money Substitutes" in Newman and Doty, Studies On Money, Chapter 3.
3. Felt, Mass. Currency, 8.
4. McCusker, Money and Exchange, 6.
5. McCusker, Money and Exchange, 157.
6. McCusker, Money and Exchange, 8.
7. Neil Carothers, Fractional Money, Ph.D. dissertation 1916 (New York, 1930, reprinted 1967), 2-5.

bullion. More specifically, a "subsidiary" coinage refers to fiduciary silver coins, whereas "minor" coins are base metal fiduciary coins. A "token" coinage conveys the idea of a money substitute, and while there may be provisions for its exchange into specie, such tokens usually do not possess intrinsic legal tender status. "Fractional" coins are a currency in denominations less than the standard silver unit.

Felt (1) discussed the derivation of the monetary denominations used for both the real and imaginary systems; these become interesting to review as part of our numismatic heritage and historical survey. The pound of account (imaginary) was introduced by William the Conqueror as equal to a troy pound of silver. This pound of account was further divided into twelve shillings (also imaginary until the reign of Henry VII) of twenty silver pennies (real), or twenty shillings of twelve pennies. The silver penny was the only silver coin until 1279 but these pence were struck with a deeply impressed cross such that they could be broken into two halfpence or into four parts called "fourthings" or farthings. The "d." abbreviation for the silver penny (and later the copper and bronze) is from the Latin denarius, a Roman silver or gold coin. The "s.", as the abbreviation for shilling, is from the Latin solidus, a Roman gold coin but more importantly a medieval money of account equal to twelve denarii. The Roman unit of weight, libra, equal to 0.718 lbs., avoirdupois, is the source of the "£" in reference to pounds. The term "sterling" refers to English currency in general, but specifically to the standard alloy of 925 part silver and 75 parts copper. This 92.5% silver content is otherwise expressed as 925.0 millesimal fineness. "Sterling" originally was the term for a pound weight of English silver pennies (2), but it also may refer to the English penny suggestive of the "stars" on the coin (sterlingus in Latin) (3). Another possibility is that the word was derived from "Easterling money" -- silver coins from eastern Germany imported into England through continental trade.

Indian Wampum

When the early colonists were faced with an inadequate supply of coins to meet their currency needs, a natural action was to employ the indigenous currency of the natives, namely Indian wampum (4). These strings of hand-

1. Felt, Mass. Currency, 15, 249.
2. Oxford Universal Dictionary.
3. See also Peter Seaby, The Story of English Coinage (London, 1952), 13, 33, 34, hereafter cited as English Coinage; and C. Wilson Peck, English Copper, Tin and Bronze Coins in the British Museum 1558-1958 (London, 1960), 2-3, hereafter cited as British Museum.
4. Wampum was variously known as "sewan, seawan, and seawant," from the Algonquian for "loose beads," and "roanoke" from the same language for "smoothed shells." In the Narraganset tongue, the name was "wampumpeag, peage, peag, peak and wampum." "Wampumpeag" specifically referred to the white polished shells which were less valuable than the dark purple or black "wampum" (Webster's Third International Dictionary; Carothers, Fractional Money, 20).

fashioned shell beads were used as both ornamentation and money. This medium was introduced into New England by the Dutch in 1627 (1). The schedule of value (2) published the following year indicated that six beads of white wampum would pass for one English penny, three beads of black also for a penny, while "one fathom of this their stringed money is worth five shillings." A notation of October 7, 1640 stated, "The want of coin enhances the rate of wampum. 'It is ordered, that white wampompeage [sic] shall passe at four a penny and blew at two a penny and not above 12 d. at a time except the receiver desire more '." (3) The value of the wampum was maintained until counterfeit material appeared which was no longer fabricated by the ancient hand-made process and stone, bone, glass, mussel shells, horn, and wood were substituted for the traditional colored shells. The last record of Wampum circulating as money was from New York in 1701 (4).

Barter and Commodity Moneys

The use of commodities as money was a practice common in the ancient world as well as in Elizabethan England whence the colonists had emigrated and so the introduction of this currency into the New World is not unexpected (5). The simplest use of commodities in commerce would be in the nature of "barter," or trading agricultural products, staples or other necessities among two or more individuals. As the exchange of these goods became more complicated, involved parties "kept running accounts of the money value of the goods trades - in terms of money of account" through a system described as "bookkeeping barter." (6) When commodities were officially designated by colonial legislatures according to an established price schedule as legal tender for private debts and taxes, "commodity money" or "country pay," as it was also known, came into being as another system to compensate for the shortage of circulating coins.

Items which were legitimized at specific values as money included tobacco (7), liquor, gunpowder, shot, furs, livestock, lumber, fish, and grain. Problems were encountered with commodity moneys when non-marketable, inferior grade merchandise was misrepresented as high quality and passed as "money," while better goods were diverted into the export market where they brought

1. Don Taxay, Money of the American Indians and Other Primitive Currencies of the Americas (New York, 1970), as quoted by Massey, "Early Money Substitutes", 22.
2. Felt, Mass. Currency, 12-13.
3. Felt, Mass. Currency, 24; Crosby, Early Coins, 26-29.
4. Bullock, Essays, 8-9; Del Mar, History of Money, 86-90.
5. Felt, Mass. Currency, 8-11, 13, 14.
6. W.T. Baxter, The House of Hancock: Business in Boston, 1724-1775, Harvard Studies in Business History, X (Cambridge, 1945), 17-21, as quoted in McCusker, Money and Exchange, 117.
7. Raymond H. Williamson, "Virginia's Early Money of Account", CNL, 931-934.

hard coin, foreign credit, or imported products in exchange (1). In one effort to control the quality of goods delivered as money, the Massachusetts General Court issued an order in 1658 that no man should attempt to pay his taxes in "lank cattle." (2) Tobacco, which was made the official currency of Virginia in 1619, was well received in England and Europe creating a favorable trade balance for the tobacco-producing colonies (3). Commodity moneys in Massachusetts ceased for a time after 1690 following the introduction of paper currency (4), but the system was resumed during the hard times of 1727 when rates were again published as to the value at which goods would be received for taxes (5).

A further sophistication in the use of commodities as legal tender was the development of commodity notes called "storehouse notes" issued as receipts or in reality certificates of inspection when goods, particularly tobacco, were deposited in official government warehouses (6). This refinement will be discussed under paper currency (Chapter Four).

Sumner, writing in 1874, was quite disparaging of commodity money or barter currency, as he called it, suggesting that its presence drove hard money out of circulation (7). "The more barter currency was used because money [hard coin] was scarce, the scarcer money became! Prices rose to fit the worst form of payment which the seller might expect." (8) Even if barter currency were "inferior in status to specie" as Sumner wrote, and despite its acknowledged shortcomings, such as inconsistent quality and requirement to provide storage space for these frequently bulky and perishable items, it was nonetheless a medium which was relatively stable in value and fulfilled currency needs in one form or another throughout the colonial period (9).

1. Nettles, Money Supply, 208-228.
2. Felt, Mass. Currency, 38; William G. Sumner, A History of American Currency (New York, 1874), 11, hereafter cited as American Currency.
3. Massey, "Early Money Substitutes", 17; Raymond H. Williamson, "Virginia's Early Money of Account", CNL, 931-934.
4. Sumner, American Currency, 15.
5. Felt, Mass. Currency, 82-83.
6. Massey, "Early Money Substitutes", 20; John J. McCusker, "Colonial Paper Money", Chapter 8 in Newman and Doty, Studies on Money, 95-97; Ernst, Money and Politics, 21; and Richard T. Hooper, "Financial History of Colonial Virginia", reprinted from The Numismatist (1953), 10, 12.
7. When there are two currencies in circulation with equal debt paying power, but unequal intrinsic value, the better currency tends to be hoarded, or bad money drives good money out of circulation. This statement known as Gresham's Law, after Thomas Gresham, (1519-1579), a financial advisor to Queen Elizabeth, and is being applied in this instance to commodity money and specie.
8. Sumner, American Currency, 5.
9. Roger W. Weiss, "The Colonial Monetary Standard of Massachusetts", Economic History Review, Second Series XXVII (1974), 580-585, hereafter cited "Monetary Standard".

Foreign Coins in the Colonies

To this point there has only been passing reference to the circulating coinage of the time, the most important being, of course, the Spanish American piece-of-eight reales which was first minted in Mexico City in 1535, but eventually appeared from many other mints in Central and South American locations. The earlier coinages were circular but without a protective edge. Beginning in 1556, the style was changed to the so-called "cob," a crude and irregular coin cut from a bar of silver and imperfectly stamped with a design and designation of value. The planchet was usually too small to receive the entire die and so the finished coin had a most primitive appearance. While cobs were minted up through 1773, the pillar dollar, or Spanish milled dollar of eight reales, and its fractional parts, were introduced in 1732, to be replaced in 1772 by coins bearing the bust of Charles III (1).

Spanish silver eight reales were also cut into fractional pieces to accommodate the need for small change. These eighth parts were called "cut money, sharp change," (2) or "bits" with "two bits" being one-fourth of the Spanish milled dollar, a term which still endures in our language in reference to a quarter of a dollar. Modern day stock quotations are still expressed in eighths, a remnant of this past tradition.

Another small Spanish coin of the period, the picayune or half-real, was useful as small change both in the Colonial and early Federal times. It became equivalent to the half-dime and the expression "picayune" became adopted into the English language to denote something of trivial worth. A debased Spanish silver coinage, the pistareen of "new plate," appeared in Spain after 1707. Although intended solely for use in the Iberian peninsula, these two reales coins of 812.5 millesimal fineness traveled rapidly across the Atlantic, particularly to the British Colonies and the West Indies (3). This important pistareen coinage will be discussed at a later point.

The early pieces-of-eight, according to an assay of 1626, weighed 420 grains (17.5 pennyweights [dwt]) and ranged in fineness from 925 to 916.66, with a pure silver content of 385 to 388.5 grains. The sterling equivalent (i.e. English currency value) varied from 53.76 to 54.25 pence (4). By 1772, the currency value of the eight reales had dropped to 52.66 pence, representing a meager 2.9 % depreciation from 1626 to 1772 (5). This level of constancy is why Spanish American silver was the revered standard for world

1. Humberto F. Burzio, "The Spanish Tradition", in Thomas V. Buttrey, Jr., editor, Coinage of the Americas (New York, 1973), 8-10.
2. Carothers, Fractional Money, 27.
3. Robert Chalmers, History of Currency in the British Colonies (London, 1893), 395, 403, hereafter cited British Colonies.
4. William Graham Sumner, "The Spanish Dollar and the Colonial Shilling", American Historical Review, III (1897-1898), 607-619, hereafter cited "Colonial Shilling".
5. Chalmers, British Colonies, 390-394, 402.

currency. Calbeto de Grau (1) describes the Spanish American coinage and particularly the eight reales piece "as a principal symbol of the world's monetary economy during almost three centuries."

There was an uncommon event during the reign of Philip IV when there "occurred a scandalous falsification in the fineness of silver moneys coined in our Peruvian mints." (2) Discovery of this fraud was recorded in 1648, when a silver merchant and an assayer at the Potosi mint were apprehended and two years later condemned to death (3). Silver coins from that mint depreciated up to 50 % in 1649. A royal decree of February 17, 1651, ordered a recoinage of the depreciated currency with a change in the design to identify the new issues of proper weight and standard. The Hapsburg coat of arms was replaced by the "crowned columns of Hercules floating over the waves of the sea." This adulteration of the Peruvian coinage almost caused the demonetization of Potosi silver in England and its colonies during the last half of the seventeenth century. In 1703, Mexican eight reales examined at the English mint were of sterling quality at 925 fineness and had an English currency equivalence of 53.86 pence. There was renewed faith in the standard.

The Spanish American eight reales was thus the coinage standard of reference for the American settlements. During the first years, this standard was at par between America and England, passing at 4s. 6d. (4). This parity did not exist for long, since economic hard times soon hit the colonies, triggering a series of events which seriously affected the local economy and currency.

By 1640 the population of the Plymouth Colony was about 2,500 (5). Between 1630 and 1640 the population of the neighboring Massachusetts Bay Colony had grown to 22,000 persons representing about 4,000 families (6). At the same time, the combined settlers in Virginia and the West Indies approached 52,000 (7). During these years, hard money had been plentiful, having been transported to Plymouth by the emigrating colonists apparently in spite of the specie exportation ban. This hard money did not remain in circulation long since it was soon returned to England to purchase needed imports. In post-1640 New England, there was a cessation of Puritan

1. Compendio de las Piezas de Ocho, Vol. I, 8.
2. Chalmers, British Colonies, 391.
3. Calbeto de Grau, Compendio de las Piezas de Ocho Reales, Vol. I, 288, Vol. II, 580-581; Tomas Dasi, Estudio de Los Reales De A Ocho, tambien llamados Pesos, Dolares, Piastras, Patacones O Duros Espanoles (Valencia, 1950), Vol. 2, #793, #796, #798, #800, #806, #811, #817, #860, CXL-CLV.
4. McCusker, Money and Exchange, 132.
5. C. Edward Holland, Benjamin W. Labaree, and Michael G. Mensoian, "Massachusetts", The World Book Encyclopedia (Chicago, 1970), XIII, 224h.
6. Marian H. Gottfried, "The First Depression in Massachusetts", New England Quarterly (1936), IX, 656, hereafter cited "Depression in Mass."; Sumner, American Currency, 9.
7. Nettles, Money Supply, 134.

Plate I

Spanish Silver in Common Use in the American Colonies. (Dasi, Estudio De Los Reales De A Ocho, passim; Burzio, "The Spanish Tradition", passim; Miguel L. Munoz, "The Mexico Mint 450 Years of Tradition", The Numismatist, Vol. 98, #5, May 1985, 882-892; Miguel Munoz, "Mint of Mexico celebrates 450 years of coins", Coin World, Vol. 26, #1307, May 1, 1985.) Coins enlarged 1.5 X.

Figure 1: One real, Mexico City Mint, second issue 1542 to 1572, of Charles and Johanna. This is typical of the first style of Spanish-American silver, a circular coin without protective edge. The obverse depicts the arms of Castille and Leon, the mark of Granada, with the mint mark "M" to the left and the initial of the assayer "M" to the right, and surrounded by the legend, CAROLUS ET IOANA REGES. On the reverse are the crowned Pillars of Hercules divided between which is the inscription PLUS ULTRA. The "Plus Ultra" refers to the fact that with the discovery of the New World there was indeed something "More Beyond" the Pillars of Hercules or Straits of Gibraltar, where the ancients thought the world ended or "Ne Plus Ultra", "There is nothing beyond". This particular coinage was issued in half, one, two and four reales denominations. This specimen weighs 52.3 grains, or practically full weight for the 420 grain eight reales standard.



Figure 2: Another circular coin without protective edge is this eight reales probably of Philip II (1555 to 1598) from the Potosi (Viceroyalty of Peru) Mint (weight 376.8 grains). On the obverse the crowned Hapsburg shield with the arms of Castille and Leon (upper left); Aragon and Aragon-Sicily (upper right); Austria and Burgundy (lower left); Burgundy (new Arms), Brabant and Granada (lower right); and Flanders and Tyrol (center). The mint mark P is to the left of the shield. The reverse features the arms of Castille and Leon.



Plate I (continued)



1.5X

Figure 3: These are typical of the second style of coinage, the "cob" or macuquina produced in all mints. The word "cob" is of Irish origin, meaning "lump". These coins of silver or gold were irregular pieces of bullion, usually too small to accommodate the stamp of the arms, date, value, mint mark and assayer.

TOP: Two reales cob of (16)80 from Potosi Mint of Charles II (105.1 grains).

BOTTOM: Eight reales of Ferdinand VI, (1)755, from Potosi, (399.5 grains) (Calbeto 1212). These specimens show the arms of Castille and Leon divided by the Cross of Jerusalem, and on the reverse the value, abbreviated date, mint mark (P), initial of the assayer, and the crowned Pillars of Hercules. This new design was adopted, omitting the Hapsburg coat of arms, (see Figure 2) after the scandal of 1652 to distinguish the recoinage of proper standard and weight from the debased issues. Cobs were continued through 1773.



This illustration sized 1:1, approximately

Plate I (continued)



Figure 4: The third style of coinage began in 1732 when the Pillar Dollar, or Spanish milled dollar, and its fractional denominations, all with protective edges, were minted in Mexico City. This innovation did not appear from Potosi until 1767. Between the famous crowned Pillars of Hercules on the reverse are two globes, representing the Old and New Worlds, with the legend, VTRAQUE VNUM, "Both United." The initials of the assayer are to the left of the obverse shield, the denomination to the right, and the mint mark appears in the reverse legend. This style was minted in half, one, two, four, and eight reales denominations. After 1728 the standard was reduced from 420 to 416 grains. The illustrated specimen is of Charles III and dated 1761 (414.7 grains).



Figure 5: In 1772 the Pillar Dollar and its fractional pieces were replaced by the bust design of Charles III, the final and fourth style. This eight reales specimen of 1778 from Mexico City weighs 413.8 grains.

Plate I (continued)



Figure 6: The Pistareen (little piastre) was a base two reales from the Spanish mainland, requiring five to equal the Spanish American eight reales standard. (Chalmers, British Colonies, 395.) This was an important subsidiary silver coinage which widely circulated in the New World as a token coinage "under the cover of a gold standard." See pages 48-49. This is a 1736 specimen of Philip V (84.6 grains).

Plate II

Other Common European Silver Coins Used in the American Colonies.
Coins enlarged 1.5 X.



Figure 1: The Patagon or Cross Dollar was first coined in (South) Brabant of the Spanish Netherlands during the reign of Albert and Isabella (1598-1621). On the reverse the crowned Hapsburg arms are encircled by the collar of the Golden Fleece of the Holy Roman Empire, and the inscription "Archduke of Austria, Duke of Burgundy and Brabant." The obverse design depicts a cross of knotty staves (cudgels) with a steel in the center. There is a crown above and the crowned monogram of the Archduke at the side. This specimen (427.3 grains) was minted in Antwerp in 1633 during the reign of Philip IV. These coins were specifically mentioned in the Proclamation of 1704. (A. Delmonte, The Silver Benelux (Amsterdam, 1967), 64.)

Plate II (continued)



Figure 2: The lion dollar from the United Provinces of The Netherlands was a common seventeenth century coin in the New World. At a weight of 427 grains and 750 fineness, this coinage had a low silver content. The workmanship was unrefined such that the lion had more the appearance of a dog, hence the term "dog dollar." This specimen, from Utrecht in 1617 (Delmonte 843), was purportedly found in a New York State hoard, an area where this coinage circulated. (The Santa Cruz Collection, Henry Christensen, Inc., December 9 and 10, 1983, lot 1011).



Figure 3: The French ecu (crown), or Silver Louis, was also cited in the Proclamation of 1704 at the same value as the Spanish eight reales. Following 1726, the weight and fineness stabilized at 440 grains and it became the heaviest legal tender silver coin to circulate in America. (Oscar G. Schilke and Raphael E. Solomon, America's Foreign Coins (New York, 1964), xv, 144-147.) This worn specimen of the youthful Louis XV was minted in Rouen in 1732 and weighs 443.2 grains (Davenport-1330).

migration since there was no longer motive for them to leave their homeland after the establishment of the Commonwealth under Cromwell. Of subsequent immigrants, more returned to England than remained in America since they found a very poor economic climate and low prosperity (1). This situation was aggravated by a 1643 crop failure in New England during which prices fell, not to normalize again for five years (2).

Felt (3) quoted a contemporary description of this first American depression in New England.

The scarcity of money made a great change in all commerce. Merchants would sell no ware, but for money. Men could not pay their debts, though they had enough. Prices of land and cattle fell soon to one half and less, yea to a third, and after to one fourth part.

Although this depression placed a significant burden on Massachusetts, one benefit was derived since the lack of money to buy imports from England obliged the colony to become more self sufficient and hence a local textile industry was born. Although the product was crude and did not replace fine English cloth, it did transform the colony "from an agricultural to a diversified economy." (4) Such progress was of concern to English merchants.

Responses to this economic crisis in Massachusetts have already been noted when the General Court increased the rate of wampum by one-third in relationship to the money of account on October 7, 1640 (5). Commodity money became more prevalent, and acts were passed to benefit debtors (6).

A more successful expedient to increase the supply of hard coin was "the raising of the moneys" by the Massachusetts General Court who increased the value of the monetary standard piece-of-eight from a par of 4s. 6d. to 4s. 8d. and later to 5s. in 1642 (7). The "crying-up of money," as it is also known, is merely currency overvaluation, a procedure commonly practiced in Europe. This is based on the premise that if coin is more highly valued in one country than another, there will be a natural flow of specie to that state where money has greater value and purchasing power, assuming that prices will not rise rapidly to reach a new equilibrium with the overvalued

1. Sumner, American Currency, 9.
2. Sumner, American Currency, 9-10; Gottfried, "Depression in Mass.", 656.
3. Mass. Currency, 23, where Felt quoted Elder Winthrop.
4. Gottfried, "Depression in Mass.", 665-666, 670, 678.
5. Felt, Mass. Currency, 12-13, 24.
6. Gottfried, "Depression in Mass.", 657-659; Felt, Mass. Currency, 24-30.
4. McCusker, Money and Exchange, 118, 132, 205. Ten years earlier, Virginia considered "raising" the value of coin but records are too fragmentary to ascertain the outcome of this earlier petition, but definite action was taken in 1645.

coin (1). As other colonies followed Massachusetts by local overvaluation of silver in terms of regional moneys of account, the advantage of the inflated value was lost, and another spiral of overvaluation was triggered.

In Virginia of 1645, the Spanish American eight reales was set at six shillings, local money of account, but ten years later was reduced to five shillings because extensive clipping of Spanish silver coins had reduced the standard eight reales from 420 grains (17.5 dwt) to an average of 384 grains (16 dwt) for circulating specimens. This lowered value for specie in Virginia "tempted People to export the Coin to other Plantations, where it went for more than it did in Virginia." Governor Culpepper rejected a 1679 proposal to "raise" the value of the Virginia currency until he managed to buy up all the light weight silver he could at five shillings. Then by his own proclamation he "raised" its value to six shillings and thereby profited nicely from his personal speculation and subsequent manipulation of the exchange rates (2). However, the Governor's advantage was short-lived when he was required to receive his own stipend in inflated silver, at which point he reissued the proclamation restoring the five shilling rate (3).

While some historians state that colonial legislatures prescribed overvaluation of silver to "attract" more specie into their jurisdiction, Ernst (4) presents the theory that overvaluation or the "crying up of moneys" was in fact a measure to control "the external drain of coin which resulted because of the chronically adverse balance of payments in the trade between the colonies and the mother country whenever the prices of colonial exports were depressed or English credits for colonial economic development fell short of the expanding needs in America."

This "competitive over-valuation of Spanish silver in terms of sterling" was a subject of concern presented to the Board of Trade in 1700 (5). At that time the following values for the unclipped pieces-of-eight are quoted in the respective colonial moneys of account, although the value remained

1. Chalmers, British Colonies, 7, quotes Rice Vaughn, A Discourse of Coins and Coinage (London, 1675): "For say they, If we do observe these States which do soonest and most raise their Money, we shall find that they do most abound with Money; and that Trader and Manufacturer do most flourish there." This is actually a currency devaluation of the money of account by an overvaluation of silver (McCusker, Money and Exchange, 118, 118n).
2. Crosby, Early Coins, 22-24.
3. Hooper, "Financial History of Colonial Virginia", 8.
4. Ernst, Money and Politics, 14.
5. Chalmers, British Colonies, 10-13. See also McCusker, Money and Exchange, for a complete listing of exchange rates between all principal commercial centers from 1600 to 1775.

stable in England at 4s. 6d.:

Maryland	4s. 6d.
Virginia	4s. 6d.
Bahamas	5s.
Carolinas	5s.
New England	6s. 6d.
New York	6s. 6d.
Pennsylvania	7s.

This list notes that the Carolinas were not separated into North and South until 1712, and that Eastern New Jersey was economically tied to New York, while Western New Jersey was identified with Pennsylvania. Maryland and Virginia were in a particular problem with hard money since specie drained from those colonies to Pennsylvania where its value was significantly enhanced (1).

The scarcity of hard money was further complicated by the fact that Spanish silver arriving in the colonies was severely clipped and reduced from its mint weight of 420 grains or 17.5 dwt. In New England the money of account piece-of-eight was calculated at 15 dwt, in Philadelphia at 12 dwt, while in Virginia, the 16 dwt coin was usual, as previously described (2). A full weight coin was a rarity and traded as a commodity rather than used as money. One remedy for receiving coins of varying weight adopted in the Leeward Islands was the use of a sliding scale whereby a 17 dwt eight reales passed for 7s., a 15 to 17 dwt coin at 6s. 6d., and any piece below 15 dwt at 6s. (3).

Although it has been estimated that up to one-half of the circulating coins in the colonies were pieces-of-eight reales (4), mention is made of other specific foreign coins, especially from the United Provinces of the Netherlands and the Spanish Netherlands. As has been described, the Spanish influence extended into the New World with their acquisition of Mexico, Central and South America. The Dutch also became a great commercial nation and had the largest merchant fleet during the seventeenth century, and supplied about half the world's shipping (5). The histories of Spain and the Low Countries (The Netherlands, Belgium and Luxemburg) are significantly intertwined and deserve some brief comment (6).

1. Hooper, "Financial History of Colonial Virginia", 9.
2. Sumner, "Colonial Shilling", 614.
3. Chalmers, British Colonies, 67.
4. McCusker, Money and Exchange, 7; Chalmers, British Colonies, 394. While this estimate is speculative, it is based on the prodigious output of the Spanish American mints. From 1537 to 1821, the Mexican mint produced over \$2,082,000,000 in silver, while in the decade 1766 to 1776, over 20,000,000 pieces-of-eight reales annually.
5. Robert W. Adams, Lewis M. Alexander, and Herbert H. Rowen, "Netherlands", The World Book Encyclopedia (Chicago, 1970) XIV, 134-135.
6. See Bernard H. M. Vlekke, Evolution of the Dutch Nation (New York, 1945), passim; and the following articles in the Encyclopedia Britannica (Chicago,

The Low Countries were successively under the domination of the Dukes of Burgundy beginning in the 1300's and the Austrian Hapsburgs after 1477. When in 1516, Charles of Burgundy fell heir to the Spanish throne, all the territories of Austria, Burgundy, including the Low Countries, and Spain, including the New World, were united under the same monarch, Charles V, Emperor of the Holy Roman Empire. Upon his abdication in 1555 the empire divided with the Spanish possessions and the Low Countries coming under the same rule of his son, Philip II. The Netherlands, which had always enjoyed a fair degree of autonomy, soon revolted and in 1581 the northern provinces (modern Holland) declared themselves independent as the United Provinces of The Netherlands. The southern provinces, including South Brabant, Luxemburg and Flanders (modern Belgium and Luxemburg) remained under Spanish authority as the Spanish Netherlands until 1795 when they fell to France. The United Provinces became a powerful mercantile nation and as such founded the Dutch colony of New Netherland which included parts of Connecticut, New York, New Jersey and Delaware.

As would be anticipated, the Dutch brought with them to the New World their current silver coins (1). The ducatoon of three guilders and the rix-dollar (rijksdaalder) of two and one-half guilders were cited by the Massachusetts General Court on September 8, 1642, when that body established the value of those coins at six and five shillings, respectively, a law which placed the rijksdaalder and the piece-of-eight at par (2). These coins were of high silver content, 994 millesimal fineness for the ducatoon and 885 for the rijksdaalder. A large part of this coinage was intended for the export trade and never circulated at home (3). The lion dollar (leeuwendaalder) or "dog dollar," so-called because its designs were so crudely fashioned, was a very important Dutch coin in the New World. Although it had only a 75% silver content, it was widely exported and reported to be the "chief metallic currency of Maryland in 1701," and again was mentioned in 1708 as "the only generall coyne among us," with its value set at 4s. 6d. (4). The lion dol-

1945): George Norman Clark, "Netherlands", XVI, 247-253; Pieter Geyl, "Holland", XI, 657-661; Henri and Jacques Pirenne, "Belgium", III, 356-360; George Edmundson, "Brabant", III, 997; "[South] Brabant", III, 997-998; "Brabant, North", III, 998.

1. Hendrik Enno van Gelder, De Nederlandse Munten (Antwerp, 1965), passim; Delmonte, The Silver Benelux, passim; P. Verkade, Muntboek (Schiedam, 1848), 33-34; Lee M. Bachtell, World Dollars 1477-1877 Pictorial Guide (Ludowici, Ga., 1977), passim. Data regarding weights and fineness are from Van Gelder, 124-125, 221, 230-231, 265, passim.

2. Felt, Mass. Currency, 26; William Graham Sumner, "The Coin Shilling of Massachusetts Bay", Yale Review, VI, (1898-1899), 247-248, hereafter cited "Coin Shilling", noted that the ducatoon of 1642 was of uncertain value and that the rix-dollar (reichsthaler, rijksdaalder) was an imprecise term for several German, Dutch and Scandinavian silver coins.

3. Delmonte, The Silver Benelux, 186.

4. Chalmers, British Colonies, 12n.

lar also saw significant service in Pennsylvania, New Jersey, and New York (1), where its exchange was established at 5s. 6d. in 1708, a little less than the piece-of-eight standard which passed at 6s. (2). The presence of the lion dollar along the Eastern Shore of Virginia was due in part to active smuggling with Dutch merchants (3). Of interest, two lion dollars were recovered in the Castine, Maine, hoard (4) which was hidden in the early 1700's, giving further evidence of their wide circulation. Additional indication of their popularity is suggested by the report that lion dollars were counterfeited in Massachusetts in 1701/1702 (5). The "Cross Dollar of Flanders," or the patagon of the Spanish Netherlands, first minted in 1612 as a "Burgundian rijksdaalder," also received contemporary attention as it was specifically mentioned in the Proclamation of 1704 (q.v.). This interesting coinage continued to bear inscriptions of the Spanish king while its lower silver content (87.5%) tended to drive better coins into the export market (6). In the Leeward Islands, the "Cross and Lyon dollars, and all Peru Pieces of Eight [i.e. cobs], without weighing" passed at five shillings (7). As seen in Table III, this schedule substantially overvalued the lion dollar. Another interesting Dutch coin was the copper doit, or dite, worth one-half farthing. The word, dite, remains in our local language, much like the word picayune, to characterize a trifle or something small (8).

In 1655 a record of foreign coin circulating in Virginia included the following with established values: (9)

	£	s.	d.
The Spanish Double Doublon	03	00	00
The Doublon, consequently,	01	15	00
The Pistole,	00	17	06
Arabian Chequins,	00	10	00
Pieces of Eight, (except of Peru,) weighing 16 penny Weight,	00	05	00
French Crowns,	00	05	00
Peru Pieces of Eight, and Dutch Dollars,	00	04	00
And all English Coin as it goes in <u>England</u> .			

1. Sydney P. Noe, The Castine Deposit: An American Hoard, Numismatic Notes and Monographs #100 (New York, 1942), 27.
2. Raphael E. Solomon, "Foreign Specie Coins in the American Colonies", Chapter Four in Newman and Doty, Studies on Money, 29-30, hereafter cited "Foreign Specie Coins".
3. Hooper, "Financial History of Colonial Virginia", 9.
4. See reference 1 above.
5. Felt, Mass. Currency, 250.
6. Van Gelder, De Nederlandse Munten, 124-125.
7. Chalmers, British Colonies, 67.
8. This common Down East Maine term, dite, is not to be confused with "mite," a New Testament half-farthing. "And there came a certain widow, and she threw in two mites, which make a farthing." (Mark xii, 42.)
9. Crosby, Early Coins, 23.

This chart introduces the "doublon" [doubloon], a gold coin which was originally the double pistole of four escudos, but in later usage became the quadruple pistole of eight escudos. The chequin or sequin was a gold ducat-sized coin common to the Arabic countries bordering on the Mediterranean and introduced into the American Colonial trade as the Barbary ducat (1). This coin circulated in the West Indies and the American Colonies in the first half of the eighteenth century but was soon discarded because of its low gold content. Essentially the sequin passed for two pieces-of-eight. From Turkey, the comparable coin was the altun, a gold coin of 52.45 grains (2) (see Table IV). Sequin is French for the Italian, zecchino, a Venetian ducat first minted around 1280. Zecchino is derived from the Spanish word, zeca, a mint, and the Arabic, sikka, a die for stamping coins (3).

From the above schedule, it is evident that the "drying-up of money" had occurred and that the weight of the eight reales in common circulation was reduced from 17.5 to 16 dwt indicative of the extensive clipping of this coinage which did not have a protective milled edge until 1732. Silver from the Peruvian mints was depreciated by an additional 20% due to the previously described debasement at the Potosi mint which occurred in 1648. The Dutch dollars, which were at par with the Peruvian coinage, were probably lion dollars. English silver was not commonly seen due to the prohibition against the export of specie (4). However, there must have been sufficient quantities of crowns and shillings in circulation to warrant their inclusion in published rates of exchange.

Analysis of the Castine Deposit (5) gives some limited information as to the types of coins current in 1704, when this cache was thought to have been hidden by the French near Castine, Maine, while fleeing the English. The number of coins from this hoard is unclear with the count ranging from 400 to 2000. As expected, French coins were the most frequent, Spanish American cobs the next most common, to be followed by Belgic and Portuguese issues. A large number of Pine Tree shillings and sixpence was recorded, perhaps as many as 75 of each. Only two English coins, shillings, were encountered in the whole lot. Other countries represented in the find were Holland [lion dollars], Spain, and Brunswick-Luneberg.

Another measure enacted to assist in keeping hard coin within the colonies was the prohibition against the export of specie, an action identi-

1. Chalmers, British Colonies, 67, 397.
2. William D. Craig, Coins of the World 1750-1850 (Racine, Wi. 1966), 742. The sequin was also known as the sultani, checken, checkeen, and chequeen (Solomon, "Foreign Specie Coins", 38).
3. Encyclopedia Britannica (Chicago, 1945), XX, 339; VII, 704-705.
4. Nettles, Money Supply, 162; Ernst, Money and Exchange, 20n; Solomon, "Foreign Specie Coins", 35.
5. Noe, Castine Deposit: An American Hoard, passim; Walter H. Breen, "Survey of American Coin Hoards", The Numismatist (Jan. 1952), 7-9, hereafter cited "Coin Hoards".

cal to that taken in England. A law was passed in Massachusetts on May 12, 1654, which attempted to keep Pine Tree shillings within the colony by imposing "forfeiture of the transgressor's whole estate" for anyone convicted of carrying over 20 Massachusetts Bay shillings out of the province (1). A "searcher for money" was appointed for each port of entry. Similarly, there was a ban imposed by the New York Legislature on September 24, 1709, restricting the exportation of all foreign coin or bullion, both silver and gold, "under Penalty of forfeiting Double the Value of all Such." (2)

Until 1704, the management of colonial currency had been pretty well left to the colonies themselves and the resultant complexity in exchange rates has been described. An attempt was made to resolve these inconveniences by creating a single monetary standard for the colonies through the Royal Proclamation of 1704 (See Table II). This document listed the comparative values of the most common current world silver coins based on an assay by Sir Isaac Newton, director of the Royal Mint (3). This Proclamation (4) dictated that the Spanish American eight reales would pass at 6s. in all the colonies, the Massachusetts rate of 1697, but in no case at a value at a value one-third greater than its sterling rate of 4s. 6d., effectively establishing an exchange rate of 133.33:100, colonial money of account to sterling. Fractional and other coins would pass proportionally to their intrinsic silver content and were not tabulated separately.

Only Maryland complied with the Proclamation, while the other colonies virtually ignored it (5), prompting the Crown to reissue the provisions of the Proclamation as an Act of Parliament in 1707 with the force of law (6). Resistance to this legislation continued since the overvaluation of hard currency provided cheaper money for payment of debts and maintained a price level which would be reduced if the currency were standardized at a lower rate. The North feared that a reduction in the inflation rate for silver coin would give the South a competitive edge in their quest for hard money (7).

1. Felt, Mass. Currency, 35-36; "The Diaries of John Hull", Transactions and Collections of the American Antiquarian Society, III, (1857), 290, hereafter cited "Hull Diaries".
2. Solomon, "Foreign Specie Coins", 30.
3. Chalmers, British Colonies, 14-15; Nettles, Money Supply, 231-248; McCusker, Money and Exchange, 126; Rogers Ruding, Annals of the Coinage of Great Britain and its Dependencies (London, 1840), third edition, Vol. II, 61-63, hereafter cited Annals of Coinage.
4. The 133.33:100 ratio directed by the Proclamation of 1704 was not a new concept, having been enacted by France in regard to its Canadian settlements in the seventeenth century (Chalmers, British Colonies, 14).
5. Nettles, Money Supply, 248.
6. Chalmers, British Colonies, 414-415.
7. Nettles, Money Supply, 233, 249.

TABLE II

Coin Values as Documented in the Proclamation of 1704 Calculated at 5s. 2d. per Troy ounce, sterling (Chalmers, British Colonies, 67,391,414-415).

Current World Coins of 1704	Weight		Sterling Value		
	dwt	grains	s.	d.	f.
Sevill pieces of eight (1), old plate (2)	17	12	4	6	
Sevill pieces of eight, old plate (3)	14		3	7	1
Mexico pieces of eight	17	12	4	6	
Pillar pieces of eight	17	12	4	6	3
Peru pieces of eight, old plate	17	12	4	5	(4)
Cross dollars (5)	18		4	4	3
Ducatoons of Flanders (6)	20	21	5	6	
Ecus of France, Silver Lewis	17	12	4	6	
Crusadoes of Portugal	11	4	2	10	1
Three Gilder Pieces of Holland	20	7	5	2	1
Old Rix dollars of the Empire	18	10	4	6	

Notes: (1) The distinction between the four types of pieces-of-eight is not always precise; Sevill (Seville) coins are from Spanish mints; Pillar pieces refer to all round coins struck in America with a pillar design but obviously not the machine-made Pillar dollars with the milled, protective edge which did not appear until 1732; Peru refers to cobs, and not specific coins from that viceroyalty.

(2) Old plate refers to the old standard of 420 grains of sterling fineness.

(3) New plate refers to a 25 % reduction in the Spanish standard where a piece-of-eight passed at ten new reales according to the debasement of Charles II of October 14, 1686, for coin in Spain alone.

(4) Written in the Proclamation as 4s. 5d. or "thereabouts".

(5) Refers to the Patagon of the Spanish Netherlands.

(6) Flanders was part of the Spanish Netherlands (modern Belgium).

Sumner (1) called attention to some inconsistencies in the computations in the Proclamation of 1704 and further added that very few coins existed with these stated weights due to loose mint standards and the widespread practice of clipping. Since coins passed according to weight, a reduction in value for lighter pieces could be calculated in local moneys of account.

Currency prior to 1704 included commodity moneys, clipped, underweight and overvalued foreign coins, and Massachusetts silver (see Chapter Three). Chalmers (2) summarized "the currency history of the period ... (a) by the

1. Sumner, "Colonial Shilling", 614-615 and "Coin Shilling", 405-410. Sumner calculated that an eight reales of 17.5 dwt of sterling standard (925 fine), should pass for 4s. 6d. 1f., not 4s. 6d., at the mint price for silver of 5s. 2d. per ounce.

2. Chalmers, British Colonies, 10.

rise of 'denominational currency' systems as the result of competitive over-valuation of Spanish silver in terms of sterling, and (b) by the final predominance of the clipped piece of eight. But it was not till the close of this period that coin superseded commodities even in prosperous colonies; in the more backward settlements barter continued to dominate the currency." As these various media circulated together, four different types of payment and price structures developed (1).

The first monetary scheme to be described was called "pay," or "country pay" which was the commodity moneys legalized by the colonial legislatures for payment of taxes according to a specific schedule. Hard coin and wampum, were the second system which was called "money." "Pay as money" was commodity money at a one-third discount from the established rate, while the fourth was aptly called "trusting," or a credit arrangement. Analysis of the price structure in New England in 1693 suggests a ratio of 1:1.33:2 between "money," "pay as money," and "pay." The relationship between "pay as money" and "pay" was at times unclear and ambiguous, which Weiss (2) suggests might have occurred when the official schedule for commodities differed from the actual market price. The distinction between "pay" and "money" was always obvious, and hard coin, i.e. "money," was always received preferentially. In Massachusetts (3) the taxpayer was entitled to a one-third discount when tax bills were settled in coin rather than "pay," while in Connecticut the reduction for specie payment could be as high as one-half (4). The desirability of coin over commodities was apparent since "pay" required storage and transportation, and was susceptible to spoilage and deterioration. Despite these problems, "pay," or commodity moneys maintained relative stability over the years. As the eighteenth century progressed, commodity moneys became less necessary and their popularity dwindled.

After the Proclamation of 1704 was enacted as law in 1707, there was no longer any advantage to be gained in the progressive over-valuation of silver. Following this Parliamentary restriction on silver coin, the West Indies resorted to a gold standard since Spanish gold was so readily available and the Proclamation of 1704 carried no restrictions regarding gold. On the mainland, however, the colonies turned to paper money as the next and final expedient to increase currency supplies (5) (see Chapter Four).

Tables III and IV list the world silver and gold coins, respectively, commonly encountered in colonial commerce. A comparison of their metal content provides an index of their relative values.

1. Sarah Knight, The Journal of Madam Knight (New York, 1825), 42, as quoted in Weiss, "Monetary Standard", 584; Crosby, Early Coins, 114; Felt, Mass. Currency, 54; Del Mar, History of Money, 78; Sumner, American Currency, 15-16.
2. Weiss, "Monetary Standard", 584.
3. Sumner, "Coin Shilling", 259.
4. Weiss, "Monetary Standard", 584.
5. Chalmers, British Colonies, 15; McCusker, Money and Exchange, 126, 257; Nettles, Money Supply, 249.

Gold coin was relatively unimportant in the American Colonies until after the Proclamation of 1704 when gold became the monetary standard in the West Indies; the most important coins were the Spanish doubloon and the Portuguese "half-joe" of 6,400 reis. The "madoire" series of Portuguese gold (1640 to 1732) was the principle gold currency of Ireland and Western England during the early eighteenth century, while the "Johannes" series (1722 to 1835) was far more important as a colonial currency. Portuguese gold was very highly prized due to its uniform consistency in both alloy and weight. Such a good reputation "led to the wholesale manufacture of counterfeit joes in North America and Birmingham." (1)

While it can be reasonably assumed that about every type of foreign specie coin eventually found its way into American Colonial commerce, some specific gold and silver issues were more commonly encountered. Jumping ahead to the time of the Confederation, a different series of foreign coin had become popular as listed within the Act of July 31, 1789, (Table V) which tabulates other foreign moneys, many of which have not been previously mentioned, and establishes their relative values.

This new regulation, which actually set the rate at which foreign coin would be received for the payment of duties, did not meet with universal approval. It was calculated by opponents that gold was overvalued by nearly 3% and silver was undervalued by more than 3% thereby giving gold a 6% advantage (2). It was argued that because of this exchange differential, the public would pay revenues in overvalued gold, speculation would develop, and "a very lucrative trade will commence of bartering our silver for gold whereby our country will be immediately drained of silver." Others claimed that the French crown was overvalued by 1.5% and that importers could make a substantial profit (3). According to Table III, it appears that French silver was overvalued in terms of English crown by 5.7%, and so this assertion was an underestimation. Despite the apparent disagreement by some parties as to

1. Chalmers, British Colonies, 396, 408. Reis is the Portuguese equivalent of the Spanish reales (royals). Madoire is a contraction of moeda de ouro, money of gold, and as a coin specifically refers to the double moeda de ouro. The Johannes or Joannes series derives its name from the monarch, King John. Theoretically the "joe" or "joanese" was the half-dobra of 6,400 reis, but in the New World this coin was known as the "half-joe" while the dobra of 12,800 reis became the "joe."

2. The Freeman's Journal or The North-American Intelligencer (Philadelphia), CCCXXXI, July 22, 1789.

3. The New Hampshire Gazette, and the General Advertiser (Portsmouth), XXXIV, #1717, July 30, 1789.

4. See footnote 3.

TABLE III

17th and 18th Century World Silver Coins Which Circulated in the American Colonies. Relative Values Can Be Extrapolated by Comparison of Silver Content. (Coins marked (*) are also listed in Table II.)

	Gross weight in grains	Millesimal fineness	Silver in grains
United Provinces of the Netherlands (1)			
1. Leeuwendaalder, 1585-1713	427.16	750	320.37
2. Rijksdaalder, 1591-1700 (*)	448	885.5	396.48
3. Ducatoon of 3 guilders (*)	501.23	944.4	473.16
4. Silver ryder (2)	503	937.5	471.3
Spanish Netherlands			
5. Cross dollar or Patagon (*)	433.64	875	379.44
6. Ducatoon of Flanders (*)	501.23	944.4	473.16
France (3)			
7. Crowns (Ecus)			
Louis d'argent, 1641-1709 (*)	423.3	916.6	388
aux trois Couronnes, 1709-1718	472.2	916.6	432.8
Navarra thaler, 1718-1724	374.9	910	341
aux deux L., 1724-1726	364	916.6	334
Ecu, 1726-1773	440	912	401.2
Ecu, 1774-1792	444	912	404.9
Spain and Spanish America (4)			
8. Piece-of-eight reales, 1497-1728 (*)	417 to 420	916.6 to 933	385 to 392
(Seville, Mexico, Peru, Pillar)			
Piece-of-eight reales, 1728-1772	417.6	916.6	382.8
Piece-of-eight reales, 1772-1848	417.6	903	377
9. Pistareen of 2 reales, 1707 (5)	96	842	81
Pistareen of 2 reales, 1772 (5)	92	812.5	74.9
Portugal (6)			
10. Cruzado (*)	268	916.6	245.46
England (7)			
11. Shilling, 1601-1816	92.6	925	85.9
12. Crown, 1601-1816	464.5	925	429.6

Notes: (1) From Van Gelder, De Nederlandse Munten, passim. There is a great variety of Dutch silver with imprecise definition between the different coinages. Except for the ducatoon and rijksdaalder which list at 487 and 442 grains, respectively, in the Proclamation of 1704 (Table II), there is excellent agreement in weight between all other coinages marked (*) which appear on both Tables II and III.

(2) Chalmers, British Colonies, 405.

(3) Chalmers, British Colonies, 404.

(4) Chalmers, British Colonies, 390-394, 402.

(5) Chalmers, British Colonies, 395, 403.

(6) Calculated from McCusker, Money and Exchange, 9-10.

(7) Chalmers, British Colonies, 405.

Table IV

17th and 18th Century World Gold Coins Which Circulated in the American Colonies. Relative Values Can Be Extrapolated by Comparison of Gold Content.

		Gross weight in grains	Millesimal fineness	Gold in grains
France (1)				
1.	Louis d'Or (French guinea) 1640-1709	104.2	916.6	95.5
	Louis au Soleil 1709-1715	125.9	916.6	115.4
	Louis de Malt 1718-1723	151.2	916.6	138.5
	Mirliton 1723-1726	100.7	916.6	92.3
	1726-1785	125.9	916.6	115.4
	New Louis d'Or 1785-1794	118	916.6	108.2
Spain and Spanish America (2)				
2.	Escudo 1537-1772	52.2	916.6	47.85
	1772-1786	52.2	901	47
3.	Pistole 1537-1772	104.4	916.6	95.7
4.	Double pistole 1537-1772	208.8	916.6	191.4
5.	Quadruple pistole 1537-1772	417.6	916.6	382.8
	or doubloon 1772-1786	417.6	901	376.2
Portugal (3)				
	Moidore series 1640-1732			
6.	Moeda de ouro	83	916.6	76
7.	Double moeda de ouro, doppia moeda, moidore or Lisbonine	166	916.6	152.16
	Johannes series 1722-1835			
8.	Half-escudo (800 reis)	27.6	916.6	25.3
9.	Escudo (1600 reis)	55.3	916.6	50.7
10.	Quarter-dobra (3200 reis, 1/4 joe)	110.6	916.6	101.4
11.	Half-dobra (6400 reis, 1/2 joe)	221.1	916.6	202.9
12.	Dobra or Johannes (12,800 reis, joe)	442.6	916.6	405.8
England (4)				
13.	Guinea 1660-1816	129.4	916.6	118.6
Miscellaneous (5)				
14.	Barbary ducat 1717 assay	61.25	818	50.1
	Arabian chequin 1740 standard	53.75	875	47

Notes: (1) Chalmers, British Colonies, 397-398, 409-410. A U.S. Mint assay noted the gold content of the 1726 to 1792 Louis d'or to be considerably lower than those stated (Solomon and Schilke, America's Foreign Coins, 103).

(2) Chalmers, British Colonies, 395-396, 407.

(3) Chalmers, British Colonies, 396, 408.

(4) Chalmers, British Colonies, 412.

(5) Chalmers, British Colonies, 67, 397.

MONEY IN EARLY AMERICA

Table V

Tabulation and Relative Rates of Foreign Coins Established by the Act of July 31, 1789. (The Connecticut Journal (New Haven), #1134, July 22, 1789.)

Coin	Dollars	Cents
The pound sterling of Great Britain	4	44
The livre tounais of France		18 1/2
The florin, or guilder of the United Netherlands		39
The mark banco of Hamburg		33 1/2
The rix dollar of Denmark	1	
The rix dollar of Sweden	1	
The ruple of Russia	1	
Real plate of Spain		10
The millree of Portugal	1	24
The pound sterling of Ireland	4	10
The tale of China	1	48
The pagoda of India	1	94
The rupee of Bengal		55 1/2
The Mexican dollar		100
The crown of France		111
The crown of England		111
All silver coins of equal fineness 111 cents per Troy oz.		
The gold coins of France, Spain, England and Portugal, and all other gold coins of equal fineness, to be valued at 89 cents per dwt.		

the wisdom of this new regulation, at least one editorialist was able to look on the light side of the situation with the following humorous ditty (4):

Collection Law (1)

To show that crowns are of small consequence
 Republicans their value prize in cents;
 One hundred and eleven cents laid down
 Will buy the gallic or English crown.

The role of foreign coinage in the economy and commerce of Colonial America, and in fact until 1857, is a fascinating story in itself just touched upon in this chapter but well expanded by the writings of Schilke and Solomon already cited. As related, this adoption of European and New World specie coins was just one answer to the problem of an insufficient local currency. The additional expedients which were utilized by the colonists to supplement their money supplies, namely the silver coinage of the Massachusetts mint and the development of paper currency, are the subjects of the following two chapters which further blend economic and numismatic history.

1. The New Hampshire Gazette, and the General Advertiser (Portsmouth), XXXIV, #1717, July 30, 1789.

MASSACHUSETTS AND MARYLAND SILVER COINAGE

Massachusetts Silver

From a numismatic viewpoint, the most famous solution for increasing the pool of circulating currency in the New England area was the founding of the Massachusetts Bay mint. Apparently it took little time before lightweight, counterfeit and debased silver coins showed up in New England commerce. It would be safe to speculate that some of this questionable money was from the Potosi scandal of 1648. The General Court responded to this uncertain money which had found its way into circulation and passed a bill on May 26, 1652 designed to counterstamp all silver coins with a mark of value. This scheme to standardize individual silver coins was never carried out but instead legislation of June 10, 1652 authorized a mint which would recoin Spanish silver received from the profitable West Indian trade (1). This proposed coinage would conform to a newly established colonial standard of 72 grains to the shilling. Since the standard English shilling of that period was 92.6 grains, this would represent a 22.25 % overvaluation of the Massachusetts shilling in terms of sterling currency on the theory that this local coinage would remain at home and escape exportation. On the contrary, Boston or Bay Colony shillings (2), as this Massachusetts silver was contemporaneously known, were exported as bullion to Europe where they were melted down (3). In fact, so much left the colony that the General Court enacted a prohibition on May 12, 1654 which allowed for the removal of no more than 20 shillings personal expense money for any departing traveler. Conviction under this new law would result in the forfeiture of the transgressor's entire estate. Despite the determination of the colonial fathers to retain these new coins within their own territory, there are records that Massachusetts silver circulated in Virginia (4), New Jersey (5), Barbados, where it was legal tender (6), and the Leeward Islands, Antigua and Nevis in the West Indies (7) at the same valuation as in New England.

John Hull, a skillful silversmith, was appointed mint master with Robert Sanderson as his partner. The operation was a very profitable venture for Hull and Sanderson, who received 15 pence for each 20 shillings minted plus an additional allowance of three pence to cover wastage. This was a formidable commission or seigniorage of 6.25% paid to the mint master and

1. Crosby, Early Coins, 29-43; Nettles, Money Supply, 171; "Hull Diaries", 145, 383; Felt, Mass. Currency, 29-35.
2. Felt, Mass. Currency, 54.
3. Dei Mar, History of Money, 78.
4. Hooper, "Financial History of Colonial Virginia", 8.
5. In New Jersey, a "New England shilling was legalized at 14 pence." ("A Penny Saved Is A Penny Earned", CNL, 472.)
6. Carothers, Fractional Money, 30.
7. Chalmers, British Colonies, 64. A Leeward Islands Act of September 24, 1670 legalized "... all New England money at its full value in New England."

his associate, and when the expense for wastage was included, the mint fee totaled 7.5%. This amount was charged to all those who brought silver to the mint to be recoinced such that the effective value of a shilling was the intrinsic 72 grains of silver plus the mint charges which equaled the cost of another 5.4 grains. Since a Spanish piece of eight passed at 5 s., Sumner (1) calculated that it was more profitable for the colonist to send any piece of eight to the mint for recoinage if it weighted over 389.18 grains and if under that weight it would be more advantageous to pass it as five shillings if anyone would accept a clipped coin at full value.

In 1672 when the value of eight reales piece was advanced to 6 s., Spanish silver could no longer be recoinced at the mint without incurring a loss in the transaction. An action of the Massachusetts General Court on October 8, 1672 begins, "Whereas peeces-of-eight are of more value to carry out of the country then [than] they will yeild to mint into our coyne, by reason whereof peeces-of-eight which might else come to coyning are carried out of the country... ." (2) This Act contains a provision whereby all circulating Spanish silver be stamped according to its value at a fee of four pence per 20 shillings. No evidence exists that counterstamping was ever conducted under this legislation and any coins with this claim are forgeries (3).

Even in 1675 when the third contract between the Colony and Hull reduced his fee to one shilling per 20 shillings minted and the wastage allowance was set at 3 d. (4), the effective value of a 72 grain shilling was 76.5 grains for anyone bringing silver to the mint to be recoinced into "Boston money" due to the included mint fees (5). The colonist was left with the choice whether to pass the Spanish silver as it was or have it recoinced. A full weight eight reales at 420 grains could, therefore, be recoinced at 65.9 d. (essentially 5 s. 6 d.) or spent in commerce at 6 s. Hence, any full weight eight reales piece brought to the mint would incur a 6.1 d. loss in the reminting process into Pine Tree currency. The Boston mint was obviously becoming unprofitable and unpopular due to the increasing price of silver and the relatively high fixed costs paid as commissions to Hull and Sanderson. Suggestions were made from 1677 to 1680 to encourage citizens to patronize the mint (6), including a reduction in weight of the shilling by nine or even twelve grains and a plan to abolish the mint fee entirely as was the practice in the English mint. Sumner calculated that if the Massachusetts shillings had been reduced from 72 to 62 grains, and the mint fees proportionally decreased to 3.875 grains, then a Boston shilling would effectively be worth 65.875 grains. At this new theoretical weight, a full weight eight reales would be convertible to 6 s. 4.5 d. when reminted as Bay shillings while

1. Sumner, "Coin Shilling", 249-257.
2. Felt, Mass. Currency, 41-42; Sumner, "Coin Shilling", 258; Crosby, Early Coins, 80-81, quote p. 80.
3. CNL, 257.
4. Crosby, Early Coins, 81-82.
5. This includes the seigniorage of 3.6 grains and the 0.9 grains allowance for wastage.
6. Crosby, Early Coins, 108; Sumner, "Coin Shilling", 259-260.

otherwise would pass for only 6 s. None of these proposals for revitalization prevailed and the mint was closed in 1682. Clearly, the Massachusetts mint was no longer an economical operation and Sumner believed that this is the real reason why it was discontinued.

Profitable or not, the Massachusetts Bay mint was clearly illegal in that minting coins was a royal prerogative denied by charter to all colonies except Virginia. When England had no monarch from 1649 to 1660, during the Commonwealth under Cromwell, the enterprising colonists took advantage of the interregnum, rationalizing that in the absence of royal authority their minting could not be judged a treasonable act. Although the mint operated from 1652 to 1682, all of the coins are dated 1652, with a single exception, to obscure the fact that the mintage was continuous over a long period.

There was agitation in England against the Boston mint, not so much concerning its legality, but rather the standards of weight, since the Board of the London Mint was adamant that all regal coinage conform to the same specifications (1). If the Boston shilling had been made equal to the English standard, then there would have been economic chaos produced in the colonies where the parity between the two currencies would have enriched "the Landlord and Creditor, but it would ruin the Tenant and Debtor, destroy the Trade of that Country, and bring no advantage, but loss to the King... ." (2) Sumner (3) suggested that if the King's bust had been placed on the Boston coins instead of a Pine Tree, and if the coinage had conformed to the English standard, then little objection would have been directed toward the mint. Nevertheless, in 1684 when the Massachusetts Bay Colony charter was annulled, the issue of the mint was another charge leveled against the colony, citing that it had defied royal authority, that the silver was from pirate plunder, that the inflated value of the Boston money lowered the royal standard, and that the seigniorage was excessive (4).

Four distinct periods of Boston shillings are recognized; the New England coinage from the inception of the mint on June 11, 1652 until October 19, 1652; the Willow Tree variety struck intermittently until 1660; the Oak Tree variety from 1660 to 1667; and lastly the Pine Tree design from 1667 until 1682 when all mint operations ceased (5). The initial reference to this Massachusetts silver was as "Boston" or "Bay Colony money," the term "Pine Tree" not recorded until the second proposal in 1680 (6) to abolish

1. Nettles, Money Supply, 172; Sumner, "Coin Shilling", 254.
2. Crosby, Early Coins, 91-94.
3. "Coin Shilling", 254.
4. Del Mar, History of Money, 76-77; Sumner, "Coin Shilling", 261, 261 n. The seigniorage for the royal mint was 3.5 %, whereas Huli and Sanderson received 6.25 % under the 1652 contract and 5% under the 1675 agreement.
5. Don Taxay, The Comprehensive Catalogue and Encyclopedia of United States Coins, 2nd edition, edited and revised by Joseph H. Rose and Howard Hazlecorn, (New York, 1976), 4-6, hereafter cited Comprehensive Catalogue.
6. Felt, Mass. Currency, 54; Crosby, Early Coins, 108-109.

the mint fee, just two years before the mint was closed. From that time to the early nineteenth century, the phrase Pine Tree was a generic reference to all products of the mint. Felt in 1839 illustrated "Pine Tree Money" (1) in which he included an Oak Tree twopence, without any distinction between the Pine Tree and Oak Tree varieties. Prime in 1861 (2) described the New England coinage and its successor, the "Pine-tree Coinage," with its variants "the Shrub or Scrub Oak shillings." Further distinction between the Oak Tree and Willow Tree varieties did not come into usage before 1867 (3). Until that time, the Willow Tree coinage may have been considered a contemporary counterfeit due to its crude appearance. When Crosby published his work in 1873, the designation between the four major divisions of Massachusetts silver appeared to have become firmly established (4). The die varieties were well described by Crosby and further amplified and defined by Noe from 1943 to 1952, with new discoveries still being reported (5).

The initial design for the Massachusetts silver was detailed in the enabling legislation which required the recoined Spanish money be stamped with "NE" on the one side and the mark of value, be it XII, VI, or III on the other (6). These initials and Roman numerals were transferred to the planchets by punches rather than by dies with three different obverse and reverse punches identified for the shilling (7). This "New England" motif was changed by the General Court on October 19, 1652 when the coinage was redesigned with a double ring at the margin to discourage and detect clipping and "a tree in the center of the one side - and New England, and the yeere of our Lord, on the other side." (8)

The New England coinage is excessively rare but Noe (9) was able to study twenty specimens of shillings in 1942. He noted that those pieces were of good weight and that the coinage was very uniform. None of those examined

1. Felt, Mass. Currency, illustration facing p. 38.
2. W.C. Prime, Coins, Metals, and Seals (New York, 1861), reprinted in CNL, C.M.S. 3-4.
3. Sydney P. Noe, The New England and Willow Tree Coinage, Numismatic Notes and Monographs # 102 (New York, 1943), 16, hereafter cited Willow Tree.
4. Noe, Willow Tree, 46.
5. Crosby, Early Coins, 43-65; Noe, Willow Tree, passim; Sydney P. Noe, The Oak Tree Coinage of Massachusetts, Numismatic Notes and Monographs #110 (New York, 1947), hereafter cited Oak Tree; Sydney P. Noe, The Pine Tree Coinage of Massachusetts, Numismatic Notes and Monographs #125 (New York, 1952), hereafter cited Pine Tree; Q. David Bowers, The History of United States Coinage (Los Angeles, 1979), 105-111, hereafter cited United States Coinage; Richard Picker, "Variations of the Die Varieties of the Massachusetts Oak Tree and Pine Tree Coinage", Chapter 6, in Newman and Doty, Studies on Money.
6. Felt, Mass. Currency, 31.
7. Noe, Willow Tree, 7, 28.
8. Felt, Mass. Currency, 35; "Hull Diaries", 119.
9. Noe, Willow Tree, 6.

signaled any indication that the change to the double ringed margin was necessary because of clipping, but Noe postulated that damaged pieces may not have survived or been retained as collectors' items.

The Willow Tree coinage was introduced in a new motif designed to detect clipping because of the double ringed margin. In contrast to the rather neat "New England" style, the Willow Tree coinage was hand struck from poorly prepared dies in a manner such that the dies were free to rotate during the process producing double or even triple impressions such that the "tree" became "a mass of confusing lines." (1) The double and triple striking created jumbled legends but analysis by Noe revealed that there are only three obverse and five reverse dies (Crosby thought there were seven reverse dies) for the 36 specimens he examined. There is but a single pair of dies each for both the sixpence and threepence. Both Crosby and Noe were very disparaging of the Willow Tree coinage.

The coins bearing this tree (willow) are so rude in conception and bungling in execution, ... as to deserve none other than a position among the experimental attempts of novices in the art of coining; unless, as has been suggested, they are to be considered as counterfeits, which to us does not appear probable. So rude, indeed, are they, that it is difficult to believe them to have been accepted by any people except under urgent necessity for coin of some kind, however imperfect (2).

On the other hand, if these Willow Tree pieces were all as badly made as the ones which have been examined herein, it would not be surprising to learn that they were melted down at the first opportunity (3).

The introduction of the screw press marked the entry of the Oak Tree variety as identified by the employment of fixed dies, with even striking making this coinage technically more advanced (4). Within this series appeared the only Massachusetts silver coin dated other than 1652, namely the 1662 Oak Tree twopence whose production probably began in that actual year (5). During the first year the twopence was coined, £ 50 worth of this new denomination were to be minted for every £ 100 of silver coined, and for the next six years, £ 20 for every £ 100 (6). It is obvious that this production schedule was never met since only one die variety has been identified, suggesting that the numbers minted were limited (7).

1. Noe, Willow Tree, 17.
2. Crosby, Early Coins, 46.
3. Noe, Willow Tree, 19-20.
4. Noe, Willow Tree, 24-29.
5. Noe, Oak Tree, 10-12, 22-23.
6. Sumner, "Coin Shilling", 256.
7. Crosby, Early Coins, 73-74.

There is a transition in design from the Oak Tree to the Pine Tree emblem with the appearance of spiny branches on the Oak Tree shilling, Noe-14. There is also a common reverse shared by three Oak Tree sixpence, Noe 20 to 22, and one Pine Tree sixpence, Noe-32 (1). This gradual change from the Oak Tree to the Pine Tree motif occurred in 1667 when Hull's second agreement with the Colony was ratified (2). The early Pine Tree shillings were on a large planchet. When it was discovered that smaller dies lasted longer than larger ones, the small planchet Pine Tree shillings were introduced, probably in 1675, the year when Hull's third and last contract was signed (3). This final agreement ran until 1682 when the mint was closed; Hull died the following year and Sanderson survived another ten.

There is little information as to the quantity of "Boston" coins minted over the 30 year span of the mint, except that it was a formidable output. Felt noted that "the products of its [the mint's] operation were long current in our country. Down to the Revolution of our Independence, they were often seen, and passed readily in business transactions; with other coin."(4)

Contemporary records speak of counterfeit Boston money and those people who attempted to defraud the public by debasing the currency (5). The earliest documented account was the 1674 conviction of John du Plisse who fabricated Massachusetts silver from pewter. A 1683 report from Pennsylvania and New York described counterfeit Boston, Spanish, and other coins in circulation. Current evidence suggests that the Pine Tree shillings designated as Noe - 13, 14, 31, and possibly 12, are contemporary counterfeits of about 65 % normal weight which were intentionally made to appear heavily worn and severely clipped and as such masqueraded as widely circulated coins to obscure their true origins (6). There are numerous other contemporary counterfeits and fabrications of Pine Tree money illustrated by Noe (7). It is clear that these questionable pieces are not the work of Hull and Sanderson since the crude design of the tree and the amateurish style of the lettering differ substantially from the genuine products.

Another interesting counterfeit Pine Tree shilling was recently reported by Trudgen who described the coin struck over a 1781 Mexican one real. He

1. Noe, Oak Tree, 8-9, 20, Plate V; Noe, Pine Tree, 40.
2. Noe, Pine Tree, 6-8.
3. Noe, Pine Tree, 7-8.
4. Felt, Mass. Currency, 49; "Hull Diaries", 306.
5. Lynn Glaser, Counterfeiting in America (n. p., 1968), 12; Kenneth Scott, Counterfeiting in Colonial Pennsylvania, Numismatic Notes and Monographs #132 (New York, 1955), 1, hereafter cited Colonial Pennsylvania; Kenneth Scott, Counterfeiting in Colonial New York, Numismatic Notes and Monographs #127 (New York, 1953), 2-3, hereafter cited Colonial New York.
6. Picker, "Die Varieties", 86-87; Taxay, Comprehensive Catalogue, 6.
7. Noe, Pine Tree, 423-47, plates VII, VIII; Noe, Willow Tree, 50-55, plate II; The Richard Picker Collection of Colonial & Early American Coins, Stacks (New York, October 24, 1984), 21-22.

Plate III

Some Common Pieces of Massachusetts Silver. Coins enlarged 1.5 X.



Figure 1: Oak Tree shilling, Noe-5 (69.4 grains), minted between 1660 and 1667. This specimen shows the typical die weakness over the obverse tree.



Figure 2: Large planchet Pine Tree shilling, Noe-1 (72.1 grains), minted between 1667 and 1674. This is the commonest variety of this style.

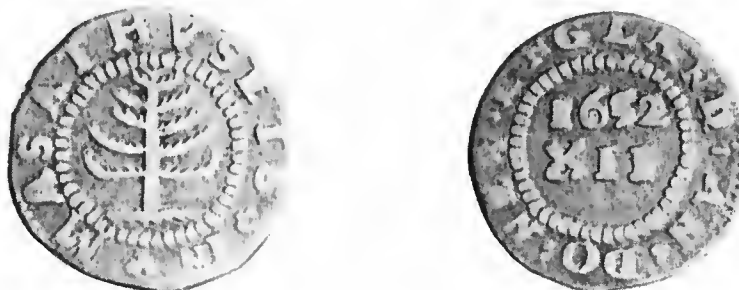


Figure 3: The small planchet Pine Tree shillings were minted between 1675 and 1682 when it was discovered that the smaller dies were more durable. This specimen, Noe-29 (69.3 grains), was made in 1682 despite the 1652 date.

speculates that these spurious pieces were produced at Machin's Mill in the late 1780's (vide infra) (1).

It is not surprising to learn that money as famous as the Massachusetts Pine Tree coinage, used in an inclusive sense, has been enveloped in its own lore and legends. One famous tale is that John Hull became so rich from his minting operation that when his daughter, Hannah, married Judge Samuel Sewall in 1675 (2), her dowry was her weight in Massachusetts silver, which legend tells us was some 10,000 coins (3). Such a sum would place the young bride's weight at almost 103 pounds or £ 500 in Massachusetts currency, a tidy sum in its day. This would be equivalent to Hull's commission for the manufacture of 160,000 shillings. Another account of this event states that the dowry was some £ 30,000, obviously not calculated from Hannah's weight (4)!

Another popular story is told of the visit of Sir Thomas Temple, the Royal Governor of Nova Scotia, to Charles II in 1662. The anecdote continues that as the two were discussing the affairs of New England, including the illegal mint, the Governor presented the monarch some Massachusetts silver. "Seeing a tree on one of the pieces, Charles inquired what sort of a tree that was. The immediate reply, it was the royal oak, which preserved his majesty's life (5). Such an answer brought the king to good humor, and induced him to hear the pleas which the governor made in favor of our colony." (6) Although quoted by some as a "ridiculous story," (7) it does emphasize the fact that the Massachusetts mint, although illegal, operated for many years with royal knowledge and indifference.

During the later half of the seventeenth century, the superstition was current that a bent silver coin would protect the bearer from witchcraft, a frenzy which had engulfed Massachusetts. Such bent and restraightened coins, called "witch pieces," include many Pine Tree shillings which were prevalent and thin enough to bend easily. Many witch pieces show teeth marks as an indication of how they were doubled. Ironically, the presiding judge at the Salem witch trials of 1692 which condemned twenty persons to death, was none other than Samuel Sewall (1653-1730). The Judge, a very prominent

1. Gary A. Trudgen, "Machin's Mills Silver Coinage", C.N.L. 896-899.
2. Harvey Wish, The Diary of Samuel Sewall (New York, 1967), 10, hereafter cited Samuel Sewall.
3. Samuel Reit, Coins and Coin Collecting (New York, 1965), 39; Crosby, Early Coins, 98; Prime, Coins, Medals and Seals, CMS-4.
4. Crosby, Early Coins, 33.
5. The "royal oak" makes reference to an event in September 1651, when the royalist forces in support of Charles II were defeated by Oliver Cromwell at the Battle of Worcester, and the king fled for his life. The newly-crowned sovereign took refuge in the branches of a large oak while soldiers searched in vain for him in the woods below. (Charles Dickens, A Child's History of England (Boston, 1875), 267-268.)
6. Felt, Mass. Currency, 38-39; Crosby, Early Coins, 75.
7. Ruding, Annals of Coinage, Vol. I, 416.

citizen, was a diarist whose commentaries on contemporary Massachusetts are a valuable resource (1). In January 1697, he publicly repented for his activities and judgments in the witch trials, took the "blame and shame," and was evermore penitent for his actions.

Noe (2) suggested that the "crooked sixpence" mentioned in the nursery rhyme, "There was a crooked man ..." could have been a witch piece. While the point is suggestive, another interpretation proposes that Charles I was the "crooked sixpence" and the rhyme refers to granting religious and political freedoms to Scotland (3).

Maryland Silver Coinage

Encouraged by the example of his northern neighbors, Cecil Calvert, Lord Baltimore, had a silver coinage of shillings, sixpence, and groats, produced in England for use in Maryland some time before October 1659 (4). Although the charter of 1632 did not specifically allow him to coin money, the second Lord Baltimore assumed this right which caused him to be arrested as a "false coiner" by an order of October 4, 1659, but not before a large quantity of the new coins had been dispatched to the colony. Apparently a compromise must have been reached between Calvert and the Crown since there is no record of any disciplinary action and his coinage continued to circulate. The weight standard for the Maryland silver was 75 % of the English. Although colonial records indicate that a mint was authorized in 1661, there is little doubt that all this coinage is of English origin. The few copper pennies known to exist were probably patterns, never produced in significant numbers.

Maryland silver had the bust of Lord Baltimore on the obverse facing left and the reverse displayed a crowned lozenged shield with the Latin legends, "Cecil Lord of Maryland", and "Increase and be Multiplied".

1. Wish, Samuel Sewall, passim; Marion L. Starkey, The Devil in Massachusetts (New York, 1969), passim.
2. Noe, Pine Tree, 19 n.
3. Jennifer Mulheim, editor, Popular Nursery Rhymes (London, 1981), 78.
4. Crosby, Early Coins, 123-132; Taxay, Comprehensive Catalogue, 7; John Craig, A History of the London Mint from A.D. 287 to 1948 (Cambridge, 1953), 376, hereafter cited London Mint; Richard T. Hooper, "Financial History of Colonial Maryland", reprinted from The Numismatist, August/September 1962.

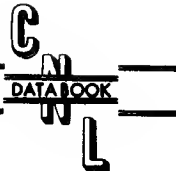
COLONIAL PAPER CURRENCY

The final scheme for the expansion of the domestic money supply was the employment of paper currencies. Previous mention has been made of "store house" or "commodity notes," given as receipts when marketable goods were consigned to official warehouses. Tobacco notes of Virginia and Maryland typify these warehouse receipts which circulated among the merchant class and were more convenient to handle than the commodities themselves. These notes were secured by the market value of the goods against which they were issued, but because of the potential for deterioration of tobacco, such notes had an eighteen months' restriction as a circulating medium (1). As other commodities gained in economic importance and the tobacco market became more volatile, this money became less important, particularly in Virginia, when paper bills of credit appeared after 1755 (2).

The negotiable "bill of exchange" was another form of paper currency which saw limited circulation among merchants and was the chief payment method of foreign debts for imported goods (3). Such a bill was created when a colonial merchant purchased a draft from a second party who had foreign credit and through this vehicle the merchant could pay for his goods in the foreign market. "The bill of exchange, basically a negotiable instrument for the transfer of money, became a form of money itself when it circulated for a while before being presented for payment"(4).

An appreciation of the problems colonial merchants encountered in paying for imported merchandise helps in understanding the intricacies of colonial finance and commerce and the maneuvers undertaken to increase the pool of domestic currency. In the final analysis the colonial merchant, without a personal source of credit but desiring English imports, had to buy English pounds to pay for such goods and those pounds were purchased with colonial moneys of account. The price he had to pay for the real English money, in terms of his local money of account or imaginary money, was determined by the prevailing exchange rate. The financial instrument, through which such transactions were usually conducted, was the bill of exchange or draft, bought in America, payable in England, and drawn on an account which had sterling credit. The rate of exchange (5), which determined the price of the English credit purchased in America, was a reflection of the local short run economic factors, the trade deficit, the strength of the local currency,

1. Hooper, "Financial History of Virginia", 14.
2. Ernst, Money and Politics, 45.
3. E. James Ferguson, "Currency Finance: An Interpretation of Colonial Monetary Practices", The William and Mary Quarterly, Third series, Vol. X, #2 (April 1953), 158, hereafter cited "Currency Finance".
4. McCusker, "Colonial Paper Money", 102.
5. Ernst, Money and Politics, 8.



and the conditions of war, to name a few. The diverse economic conditions prevailing within the thirteen colonies, created varying strengths of the local moneys of account. For that reason different exchange rates existed between the various colonies and England, and between the colonies themselves. This inequality among the colonial moneys was a frustration which made intercolonial commerce confusing and complicated. If exports were low and foreign credits, therefore, scarce, then the price for the bills of exchange increased to meet the demand (1). At such a time when the exchange rate (i.e. the price of foreign credit) was unfavorable, the merchant might find it economically more advantageous to ship hard coin to England to meet his obligations rather than to pay the premium for the scarce sterling credits earned by sluggish colonial exports. The level at which it was cheaper to pay by sending coin rather than buying expensive credits was called the "specie export point"(2). The colonial merchant was assisted in this decision whether to ship coin or buy bills of exchange by consulting published reference tables. When colonial exports were low and earned credit became expensive, more specie was drained away to England where it was remitted for imported goods as the "specie export point" was exceeded; thus the supply of circulating coin dwindled in the colonies. The adequacy of the local hard money supply was, therefore, related to the strength of the colonial export market among other things. This is one explanation for the variable reports concerning the availability of coin in different areas at different times, and why exchange rates, or the price of credit, differed among the colonies. The colonies also became competitive in attracting specie into their individual territories, or discouraging drain, so that the local "crying up" of money or overvaluation of silver became a popular option until its advantage was lost after the early 1700's when such practices became the target of the Proclamation of 1704. Massachusetts minted its own overvalued local coinage (in terms of sterling) and unsuccessfully forbade its export in order to maintain enough circulating medium for domestic commerce. England did not assist her colonies with their monetary problems since "she needed more silver than she could obtain for her own use - for currency, trade and war. She refused to allow separate colonial mints on the ground that all the money of the Empire should conform to one single standard,"(3) but such conformity was an unacceptable alternative for the colonists since it would devastate creditor-debtor relationships. All of this occurred against the background of English mercantilism whose stated objectives were to keep the colonies dependent, yet wealthy enough to buy English goods but not so prosperous as to develop competitive local industry. While this summary may be a naive oversimplification of the very complex subjects of colonial money supply, commerce and exchange rates, it does serve to relate numismatic and historic observations and the emergence of paper currency.

By the early eighteenth century, the American colonies were faced with the

1. Ernst, Money and Politics, 10
2. McCusker, Money and Exchange, 22-23, 116-117. Ernst, Money and Politics, 15-16n. Ferguson, "Currency Finance", 158.
3. Nettles, Money Supply, 278-283, quote 280.

situation of insufficient specie to conduct domestic and export commerce. Other plans, such as overvalued coin and commodity moneys, did not develop enough medium for local trade, so more inflationary programs were envisioned, the most significant of which was the emergence of colonial paper currency or bills of credit. "If coin shortage was the underlying cause, war provided the immediate occasion for paper money."(1) A series of wars were fought in North America between the French and English from 1689 to 1763, which, with one exception, were local extensions of European conflicts (2). In 1690 an ill-fated military expedition to French Canada failed to return the anticipated booty to the Massachusetts treasury which was unable to raise funds to pay troops and other war incurred obligations. The colonial government could not afford to borrow to meet these expenses and their only recourse was to issue "bills of credit," backed only by the good faith of the colony (3). This system, described as "currency finance" is a stratagem whereby "the heavy burden of military expenses and other public demands" is underwritten by "short-term lending by issuing notes in anticipation of future tax-returns."(4) While this first emission of money solved the immediate problem of quelling mutinous soldiers who demanded their wages, it launched the colonies on a hundred years' career of paper currency. A similar campaign in 1702 was responsible for the next issue of paper money in Massachusetts, and during the next year South Carolina followed suit to support its military objectives. The cost of further armed excursions into French Canada and the immediate need for ready cash lured the other New England Colonies, New York, and New Jersey to solve their financial deficits by 1711 with a printing press (5).

Paper currency depreciated in Massachusetts prior to 1750 after which time it was very stable. North Carolina continued with inflated paper money, whereas South Carolina had good currency management from 1731 until the Revolution. Rhode Island had a long history of depreciated paper which "undermined the currency of her neighbors" and abuses within her land bank precipitated the Currency Act of 1751 (vide infra).

1. Nettles, Money Supply, 255-256.
2. A summary of the Colonial Wars (Richard Hofstadter, World Book Encyclopedia (Chicago, 1970), VII, 438-439).

Dates	Colonial War	European War	Colonial Involvement
1689-1697	King William's	League of Augsburg	N.Y., N.E.
1702-1713	Queen Anne's	Spanish Succession	N.E., Florida, S.C.
1744-1748	King George's	Austrian Succession	Northern colonies
1754-1763	French and Indian	Seven Year's	Began in American as a territorial dispute

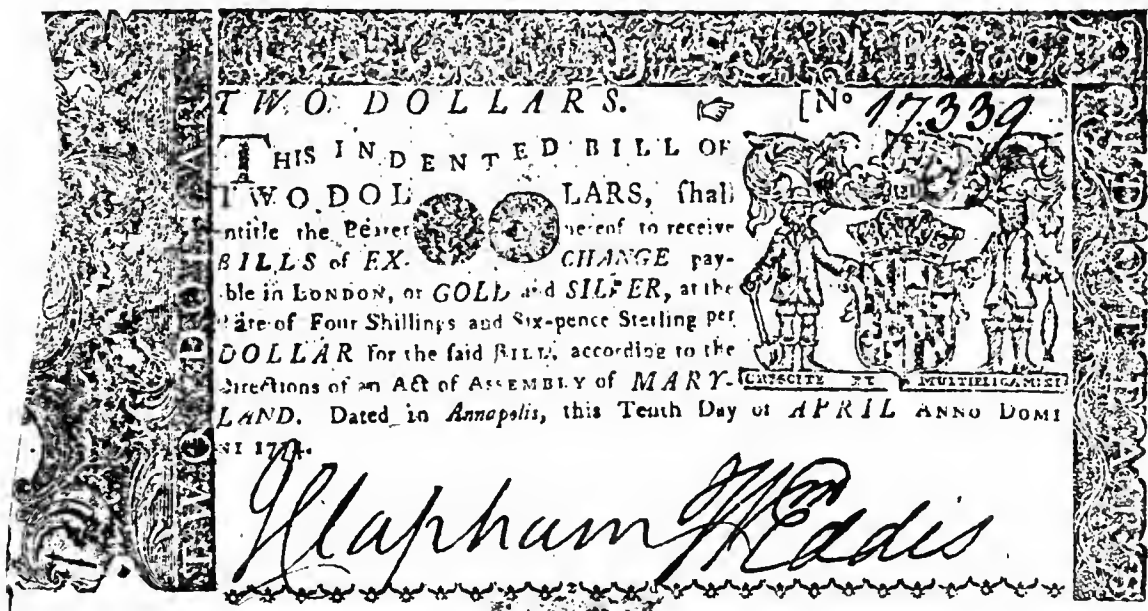
3. Hard money was available, but at what price? See pages 4 to 5.
4. Ernst, Money and Politics, quote 22; Ferguson, "Currency Finance", 171-172.
5. George L. McKay, Early American Currency, Numismatic Notes and Monographs #104 (New York 1944), 13-25. The order of emission of paper money was as follows: Massachusetts 1690; the Carolinas 1703; New York 1709; New Hampshire, Connecticut and Rhode Island 1709-1710; New Jersey 1711; Pennsylvania 1723; Delaware and Maryland 1733; Georgia 1754; Virginia 1755. (from McCusker, Money and Exchange, passim.)

Plate IV

Colonial Paper Currency

Figure 1: (Opposite) This is a ornately printed bill of exchange, engraved by Nathaniel Hurd of Boston in 1762. Most bills of exchange, however, would have been hand written and far less decorative, although the elaborate design on this issue would have discouraged counterfeiters. This particular bill was drawn for £200, sterling, against the London account of the provincial government of Massachusetts Bay and payable to their London agent, Jasper Mauduit, Esq. (Courtesy, American Antiquarian Society).

Figure 2: (Below) A Maryland two dollar (enlarged 127%) note of April 10, 1774 which did not have legal tender status. This bill was issued at the sterling rate of exchange of 4 s. 6d. to the Spanish milled dollar (not Maryland money of account) and was receivable for Bills of Exchange, payable in London. This provision avoided the constraints of the Currency Act of 1764. This note is illustrated with two tiny Spanish milled dollars, and together with the one dollar note of the same series, is the first time that coins are pictured on American paper money. (Eric P. Newman, The Early Paper Money of America, (Racine, Wi, 1976), 21, 131, 133.)



Maryland Two Dollar Note of April 10, 1774

Plate IV (Continued)

Exchange for £200 Sterl: 1771 Boston July 27th 1772

Sir,

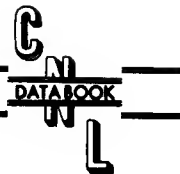
At thirty days sight of this my third Bill: my first
second fourth of the same tenor & date unpaid pay unto John
Lyne Esq: or order Two hundred pounds sterling for
Value received, and charge it to the Province of the Massachusetts Bay but
if it is not paid at said thirty days sight, then pay Interest on that sum
from the Expiration of said thirty days untill paid, at the rate of six pounds
per Cent Annum, and if this Bill & Interest is not paid in one Year from the
Date hereof, I hereby oblige myself & myors in the Office of Treasurer
of the Province of the Massachusetts Bay to pay said Bill with Interest from the
Date of it at the above rate untill paid, when it shall be returned with a Pro
test into the Office aforesaid, but no other Charges or Damages, Provided
that if Payment be not demanded within six Months after the Date of
Protest, the Interest shall from that time determine & cease.

£200

To Jasper Mauduit Esq: Agent for the Province of the Massachusetts Bay in
London, in case of his Death, Absence or
Refusal of s. Trust, to Rich: Jackson Jun: Esq:

Alfred Prov. Treas:

MASSACHUSETTS BILL OF EXCHANGE
Printed by Nathaniel Heard



Virginia did not issue paper money until 1755 when forced into that position by expenses of the French and Indian War. Prior to that time, hard coin had been supplemented with tobacco notes; but "the expansion of population, the conversion of a barter economy into a rapidly growing market economy," periodic fluctuations in the tobacco market (1), and the shortage of circulating specie (2), together with military expenses, pressed the colony into the creation of a paper currency. The new money fared well until 1760 when falling tobacco prices in the export market created a depression. Specie and bills of exchange then became so expensive that Virginia currency was depreciated up to 60 % for the purchase of expensive sterling credits (3).

In addition to fiat money secured by future tax assessments and issued for immediate government expenses such as war, there also developed a land bank system which provided loans to land owners in the form of paper currency with property mortgages as security. Such banks were established in Pennsylvania, New Jersey, Delaware, New York and Maryland, all of whose money was very stable and depreciated little. The well-managed Maryland paper currency would have been redeemable at face value had it not been for the Revolution (4).

The study of colonial paper currency has been punctuated with much controversy. Ernst and Ferguson (5) point out to modern day readers that some historians of the past century allowed their personal views on "sound money" (paper backed by bullion) to bias their interpretation and commentaries on the colonial period especially in regard to the stability of colonial currency and the purported conflict between the creditor and debtor classes. Historians of the last century blamed the depreciation of colonial paper money on low public confidence in fiat money unsecured in bullion, issued in excess, and printed at the instigation of debtors to lessen the burden of their obligations. They further supported their position by quoting such contemporary observers as William Douglass, an avowed foe of paper money, who leveled many tirades against that practice during the 1700's, contending, for example, that "Paper money-making assemblies have been legislatures of debtors." (6) Modern historians emphasize that the conditions responsible for the depreciation of colonial currency, such as occurred in Virginia in the 1760's, were normal market forces and currency fluctuations, simple price inflation, and short run economic factors rather than the depreciation of large quantities of unsecured paper money which lacked public confidence.

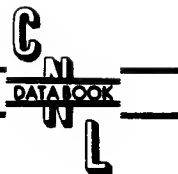
1. Ernst, Money and Politics, 45.
2. Hooper, "Financial History of Colonial Virginia", 12 and passim.
3. Ferguson, "Currency Finance", 159-160.
4. Kathryn L. Behrens, Paper Money in Maryland 1727-1789, Johns Hopkins University Studies in Historical and Political Science, Series XLI #1 (Baltimore 1923), 58.
5. Ernst, Money and Politics, 1-17, 354; Ferguson, "Currency Finance", 153-155, passim.
6. Bullock, Essays, 47-48.

While the "quantity theory" may be argued for the decline of paper money in Rhode Island and other colonies during certain periods, it would be an untrue generality for all regions, despite the opinions of earlier writers. These earlier historians also generalized that class conflicts existed between creditors and debtors, and merchants and farmers, where the creditors and merchants stood for secure currency, such as hard coin, while the debtors and farmers lobbied for paper currency since they sought a depreciating medium with which to satisfy their obligations (1). This alleged creditor-debtor and merchant-farmer class struggle was not broadly representative of conditions in all the colonies and this concept is an inexact portrayal of colonial life, except in specific areas such as Rhode Island. In general, colonial paper money was a stable medium throughout its history, although the exceptions are noted.

Financing colonial participation in the French and Indian Wars was largely a local responsibility. Massachusetts successfully persuaded the English Parliament to redeem the colonial bills of credit issued to offset the expense of the Cape Breton offensive of 1745. A large shipment of 650,000 ounces of Spanish silver coins and ten tons of English coppers arrived in Boston on the ship Mermaid on September 18, 1749 (2). These coppers are of numismatic importance since 801,376 halfpence and 424,032 farthings, mostly dated 1749, continued to circulate for years and should be considered an important and legitimate colonial coinage (3).

This supply of specie stabilized Massachusetts paper money, which had previously undergone significant depreciation. This strong, provincial currency lasted until the Revolutionary War, earning for the area the epithet, the "hard money Colony." (4) Another stipend of £ 115,000 was given to the colonies in 1756 "as a free gift and reward for past services", against the French" and distributed to New England, New York and New Jersey (5). Further reimbursements were offered to North Carolina, South Carolina, and Virginia in 1757, to Massachusetts and Connecticut the following year, and to New Hampshire in 1770, all for the campaigns of 1756. Despite these and other specific grants made in 1759 and 1762, the colonies recovered only about one-fourth of their expenses incurred in the Seven Years War (6).

1. Ferguson, "Currency Finance", 155, 161, 163, 165.
2. John M. Sallay, "The Depreciation of the Massachusetts Currency and the Effects of the Redemption in 1750", CNL, 519-530, hereafter quoted "Depreciation and Redemption"; Crosby, Early Coins, 226-229.
3. Raymond H. Williamson, "On the Importation of 1749 Halfpence and Farthings", CNL, 545; Walter H. Breen, "More on the Importation of 1749 Halfpence and Farthings", CNL, 585; Prime, Coins, Medals, and Seals, C.M.S.-5; Eric P. Newman, "The Face Value of English Copper Coins Sent to Massachusetts in 1749", CNL, 681-684.
4. Felt, Mass. Currency, 124-139.
5. Felt, Mass. Currency, 140. This stipend was allotted as follows: Massachusetts £ 54,000; New Hampshire £ 8,000; Connecticut £ 26,000; Rhode Island £ 7,000; New York £ 15,000 and New Jersey £ 5,000.
6. Courtney L. Coffing, "Colonies Had Friends Among British Foes", Coin World



It will be recalled that following the Proclamation of 1704, the mainland colonies resorted to paper currency whereas the West Indies went onto a gold standard because of the ready supply of Spanish gold, while Spanish American silver was traded more as a commodity rather than money (1). The "new plate" two reales, or pistareen, from Spain "served for internal and subsidiary circulation under cover of a gold standard." This "new plate" was silver currency debased by 20 % which protected it from the melting pot. These coins circulated as token money while sterling quality specie from the Spanish America was treated as bullion. It must be clarified that the pistareen was a debased Spanish two reales, not a Central or South American two reales, which passed as one-fourth of the standard eight reales. In 1759, a Spanish pistareen (from Spain) passed at 17.8% and 18.75% of a Spanish milled dollar (from Spanish America) in Philadelphia and New York, respectively. Two Spanish-American reales, as a fractional coin, would have passed at 25% of the dollar (2). Pistareens became an important coin in "colonial currency for more than a century," both in the West Indies and the mainland colonies, including Nova Scotia (3), where its lower content of pure metal saved it from the fate of other Spanish and Massachusetts silver coins. (Plate 1, figure 6.)

In Massachusetts, in 1750, at the time of the redemption of paper currency, Felt (4) described the local experience with pistareens.

It having been discovered that pistareens and larger and smaller pieces of the same stamp ("new plate"), had been imported among the specie from London, and paid out of the treasury for Province notes, an order is issued, that all such money considered of greater alloy than others, shall be retained until further action of the Court. Here we are introduced to coins, which became current and are familiar to the memory of many.

This notation by Felt indicated that base "new plate" Spanish coins, including pistareens, were included in the Mermald shipment. By April 6, 1753, when the exchange rate for pistareens in Massachusetts was established at 14.5 d., the quantity of base Spanish silver from the Mermald consignment was placed in circulation (5). These newly arrived coins were apparently popular since the colonists chose "the Spanish pistorines at 20 percent over the intrinsic value" in preference to the small denominational paper money printed to provide small change at the time of the 1750 redemption of

(Wed. June 30, 1976), 81, 86; Felt (Mass. Currency, 150) quotes the 1762 grant at £ 200,000.

1. Chalmers, British Colonies, 15-16, 359, 403.
2. Solomon, "Foreign Specie Coins", 32, 35, 41.
3. Bell, The "Foreign Protestants" and the Settlement of Nova Scotia, 267, 343.
4. Felt, Mass. Currency, 128-129. From the Massachusetts Provincial Records.
5. Felt, Mass. Currency, 136.

the bills of credit (1). The pistareen was so well received in Virginia by the outbreak of the Revolutionary War, when it passed for 15 d., money of account, that the 1 s. 3 d. Virginia paper money note of 1775 carried the additional designations of "A Pistareen [sic]" and "fifteen pence." (2) At a rate of 72 d. Virginia money to the Spanish milled dollar, the other fractional paper denominations of 30 d., 60 d., and 90 d. coincided to two, four, and six pistareens, respectively, all passing at a rate 20% lower than the Spanish American dollar standard. Despite the implied approval of the pistareens, this coinage never attained legal tender status in the United States after 1792 although other Spanish silver was still recognized (3).

The paper money policies of the mainland colonies came under the scrutiny and attack of English merchants and the Board of Trade which proposed corrective legislation. Parliament was finally goaded into action when the Rhode Island Assembly issued £ 50,000 loan office notes in a popular request for more depreciated currency. The reaction from London was the passage of the Currency Act of 1751 which regulated paper money in the New England colonies by outlawing land banks, forcing existing paper to be retired strictly according to the terms of its issue, and stating that any new paper could only be used to pay the current expenses of government and must be redeemable by taxes. The final provision of this restrictive act was to deny the legal tender status of paper currency for private debts (4).

As events in Rhode Island had precipitated currency reform in 1751, the economic depression of 1760 in Virginia due to a slump in the tobacco market prompted Parliament to extend control over all the colonies to protect English mercantile interests with the Currency Act of 1764. This action denied legal tender status to all other colonial paper currency and required that all existing issues be retired according to the provisions of the enabling legislation (5).

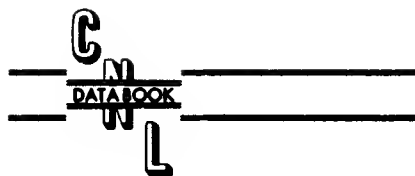
These currency regulations were subsequently relaxed when specific colonies were again permitted to establish land banks, but still Parliament refused to permit legal tender status for paper in private debts, responding to the apprehensive English merchants who wished for a guarantee that sterling debts be satisfied in hard money (6). In final analysis, "the

1. Thomas Hutchinson, The History of the Province of Massachusetts Bay from 1749 to 1774 (London, 1828), 9, as quoted in Sallay, "Depreciation and Redemption", 528. Felt (Mass. Currency, 127) listed the denominations of these small bills as 1 d., 2 d., 3 d., 4 1/2 d., 6 d., 9 d., and 18 d.
2. Williamson, "Virginia's Early Money of Account", 937-938, 946.
3. Schilke and Solomon, America's Foreign Coins, 73-79. This book catalogues foreign coins which had legal tender status in the United States from 1793 to 1857.
4. Ernst, Money and Politics, 37-42; Ferguson, "Currency Finance", 177; Chalmers, British Colonies, 16-18.
5. Ernst, Money and Politics, 76-88; Ferguson, "Currency Finance", 177; McCusker, Money and Exchange, 131; Chalmers, British Colonies, 18.
6. Ernst, Money and Politics, 43-44, 76, 87.

Currency Act of 1764 appears as a move to safeguard British investments in America, a move dictated by metropolitan, not colonial, needs."(1) "Although the Board of Trade and later Parliament never offered any help, they were quite ready to regulate and restrict."(2) Compromise monetary proposals were forwarded by leaders such as Benjamin Franklin, a staunch advocate of paper money, to develop a single colonial land bank system with offices in each colony (3). This innovation never survived the planning phase and the rift between mercantilist England and its maturing American colonies widened. Franklin's advocacy of well managed paper currency, was not only in theory but in practice, since he, himself, printed three issues of paper money for New Jersey, nine for Delaware, and fifteen for Pennsylvania from 1728 to 1764, with over 2,500,000 notes from his presses (4). Now that the French and Indian Wars had come to an end, England could direct closer attention to its colonies and their protective policies became more restrictive. There is substantial cause to believe that the Parliamentary restraints on colonial paper money and, therefore, commerce were significant factors in precipitating the Revolutionary War in addition to the better known encroachments on political freedom (5). Whatever the facts may be, this current book presents only a brief summary of the complicated subject of colonial paper money, an inadequately understood area that allows room for additional research (6).

Colonial numismatic history comes to a natural dividing point at this juncture. The previous chapters have described the economic conditions within the colonies, emphasizing the economic cycles of recession and expansion which influenced the ready availability of circulating hard money. When such coin was scarce for usual commerce and the government could not afford the price on the market, such shortages could not be remediated by any external infusion of wealth; the English colonies had no natural mineral wealth in gold and silver and relied on specie earned in the West Indies trade with Spanish possessions; England, herself, lacked sufficient coinage and was in no position to subsidize others; and the mercantile theory of colonization favored English interests over American and discouraged colonial economic self-sufficiency. The scarcity of hard money for conducting commerce stimulated the development and use of alternative currency forms; from aboriginal wampum, to commodity moneys, to a domestic silver coinage, to

1. Ernst, Money and Politics, 359.
2. McCusker, Money and Exchange, 131.
3. Ferguson, "Currency Finance", 179.
4. Eric P. Newman, "Franklin Making Money More Plentiful", Proceedings of the American Philosophical Society (115, #5, 1971), 341-349.
5. Bullock, Essays, 59; Felt, Mass. Currency, 132; McCusker, Money and Exchange, 119, 131; Evarts Boutell Greene, Provincial America 1690-1740, in Albert Bushnell Hart, editor, The American Nation: A History, Vol. VI (New York, 1905), 180; Ernst, Money and Politics, Chapter 11, "The Political Economy of Revolution". Franklin, himself, supported the position that currency restrictions were leading causes of the Revolution (see Ferguson, "Currency Finance", 164).
6. Ernst, Money and Politics, 16-17, 359.



several options in a paper medium. In 1763, following cessation of the French and Indian Wars, England directed more attention and energies toward America. The increasing regulations placed on colonial trade and paper currency became chronic irritants, leading to the eventual independence of the colonies. However, before our story reaches the point of revolution, there are other issues of numismatic history to be related.

THE EMERGENCE OF COPPER COINAGE

Frequent mention has been made of the fact that England failed to provide a domestic coinage for its New World Colonies which were left to their own devices until 1704 when currency regulations were first imposed since England, herself, was experiencing significant problems. Her own specie was being drained to India and the Continent where it fetched higher prices. She was in no position to rescue her American possessions from their monetary predicaments even if it had been her intent to do so. Laws were passed forbidding the exportation of English silver and gold coin but the prohibition did not apply to bullion, foreign coins, or English copper (1). England, too, was plagued with worn, clipped, lightweight coins, which, with few exceptions, were hammered until 1662 when the screw press came into common use. To remedy the inequities in weight of the antiquated, clipped, hammered coins, a recoinage was ordered in 1696 when all old coins were demonetized and recalled to the mint. These were reissued with a grained (milled) or lettered edge, which because of easy detection, discouraged clipping (2). This significant action helped stabilize English currency.

While much has been said of silver and gold coins, no mention has yet been made of copper. The precious metals obviously had greater importance in trade and commerce, but copper filled the need for small change and was the money of the poor and economically disadvantaged. Although of negligible economic significance, copper money of the period remains of great historic and numismatic interest both in England and her colonies.

In England the need for minor coins as change in commerce was filled by inconveniently small silver halfpence and farthings from 1280 to 1613 and during the reign of Elizabeth I, three farthing silver pieces were introduced (3). Such coins were insufficient in number to meet the demands of commerce, were expensive to make in comparison to their value, and were easily lost due to their minute size. "The Crown seems to have considered it beneath the royal dignity to issue coins struck in base metal," and to supplement the short supply of silver small denominational currency, merchants resorted to local tradesmen's tokens (4). First made of lead during the time of Queen Elizabeth and later of pewter and copper, these tokens were an unofficial subsidiary coinage in that their metal content was worth less than their denominational monetary value (5). For a time these private tokens were

1. Craig, London Mint, 162-166, passim.
2. Ruding, Annals of Coinage, Vol. II, 48-49. The larger gold and silver coins had a lettered edge frequently with the date and the inscription DECUS ET TUTAMEN, "A Decoration and a Safeguard." Lesser coins had a grained (milled) edge to detect clipping. (Seaby, English Coinage, 78.)
3. Peck, British Museum, 2, 7.
4. Seaby, English Coinage, quote from 60, 63.
5. Peck, British Museum, 5-6.

outlawed, but in 1613 the Royal Mint struck copper farthings on a royal patent granted to Lord Harrington who shared the profits with the King. This privilege passed to the Duke of Lennox, and successively to the Duchess of Richmond in 1624, and ten years later to Lord Maltravers. In 1644, popular dissatisfaction with these lightweight, small Maltravers farthings was so intense that Parliament ordered production stopped. Again, the need for small change prompted merchants to strike another round of copper halfpence and farthing tokens, this time in very large numbers. A royal copper coinage was minted for the first time on August 5, 1672, during the reign of Charles II, in an attempt to replace the vast number of disparate tradesmen's tokens, some 3,500 different varieties originating from London alone (1).

The reverse design for this first official copper coinage was adapted from a copper sestertius of the Roman Emperor Antoninus Pius commemorating triumph over the Britons with the familiar seated reverse figure facing left holding a branch with a shield to the right and the legend, BRITANNIA (2). It becomes of particular interest within the scope of this current book that the Connecticut and Vermont coppers of the late 1780's will adopt this motif first used in 140 A.D.!

There were several important differences between copper coins and those of precious metals. First of all, base metal coins were never considered money but only as a token substitute for money. Their manufacture was not a regular duty of the mint but rather was a special arrangement between the king and the mint master (3). Although copper coins were made legal tender by a Proclamation of August 16, 1672, their minting costs were included in the overall value of the coin and could not be waived because of "the disproportionately high cost of manufacturing copper coin, as compared with gold and silver." (4) The new coppers, therefore, passed at a rate greater than the intrinsic value of the metal. To make matters more complicated, the mint actually produced the halfpence and farthings at a substantial profit to the Crown which encouraged counterfeiting, "and so laid the seeds of much trouble for the future." (5) An additional difference between precious and base metals was that copper was calculated in avoirdupois at 7000 grains to the pound, while gold and silver were measured by the troy system at 5760 grains to the pound. The final point for emphasis was that there was no export restriction for copper thus explaining how English halfpence and farthings could be included in the Spanish specie shipment to Massachusetts in 1749.

It is necessary to examine the cost of production of English coppers at the Royal Mint since this becomes an important issue in regard to the

1. Seaby, English Coinage, 63, 66-67, 73-74; Peck, British Museum, 19-82.
2. Seaby, English Coinage, 79; Craig, London Mint, 174; Peck, British Museum, 110.
3. Craig, London Mint, xiii, 174-175.
4. Peck relates, "the present-day farthing costs about a halfpenny to produce." (British Museum, 106n)
5. Peck, British Museum, 106.

Plate V

The design for the English copper coinage was patterned after various copper sestertii of Antoninus Pius, minted in Rome 140 to 144 A.D., commemorating military victories over the northern tribes of England. The obverse depicts the laureated Emperor with the legend, ANTONINUS AUGUSTUS PIUS PATER PATRIAE TRIBUNICIA POTESTATE CONSUL III (Consul for the third year).



There are a variety of reverse figures. This illustration, B.M.C. - 1637, Seaby - 496, shows the bearheaded Britannia seated on a rock holding a spear, whereas another Britannia (B.M.C. - 1639) cradles her spear with her left elbow, and more closely resembles the motif adopted by the the English mint in 1672. Beneath the seated figure is the inscription S.C. (Senatus Consulto), indicating that the coin was issued by the Senate and not directly by the Emperor. On the English coppers, these initials were replaced by the date. (Peck, British Museum, 110; Gilbert Askew, The Coinage of Roman Britain (London, 1951), 12.) In 1785 the State of Connecticut chose a similar pattern for their coppers, thus perpetuating 1,645 year old Roman numismatic art in America. Photo courtesy of The Trustees of The British Museum. Illustration enlarged 1.5 X.

circulation of copper coinages in general which will be discussed later in detail. As previously noted, not only the cost of the copper, but all labor, fees, and planchet preparation expenses were figured into the value of the copper coins (See Table VI), whereas such costs for silver and gold were absorbed by the government as a legitimate charge (1). In that these coppers were a token coinage which represented money rather than being of full money value themselves, any manipulation which either decreased production costs or increased yield per pound of metal, would augment the profit margin to the Crown. Such was the circumstance in 1718 when the Royal Mint, faced with higher costs, increased the yield of halfpence from 21 d. to 23 d. per pound of copper, and farthings proportionately (2). Similarly, no coppers were minted during the early reign of George III until 1770 because of the high price of copper (3). The shortage of regal coppers for small change at that time prompted a flood of lightweight counterfeits, a very important circumstance which will be discussed in much detail in subsequent chapters.

From 1672 until 1679, copper suitable for planchets had to be imported from Sweden where an export tax of 2.5 d. per pound had been imposed. To circumvent this situation, another solution was proposed which not only bolstered the sagging Western England tin industry but created substantially higher profits for the Crown (4). The enacted plan was to substitute tin for copper in the manufacture of halfpence and farthings. The edge inscription on these new tin pieces was NVMMORVM FAMVLVS, "The Servant of Coinage," which emphasized its token and subsidiary status. The significant profit from this tin money encouraged large scale counterfeiting which was frustrated to a degree since all genuine tin coins had a central plug of copper within the planchet.

This new tin coinage, ordered on May 28, 1684, was very unpopular and short-lived, but existed long enough for Richard Holt to obtain permission to mint a 1/24th real tin coinage for the American plantations (5). The Spanish denomination was selected because of colonial familiarity with Spanish money which would facilitate acceptance in commerce. Holt's 1688 patent tin coinage lacked the copper plug incorporated into the regal tin coins to thwart would-be counterfeiters. The American issues appear to have been lighter than the English and hence the profit to the patentee was greater since production costs were otherwise equal. Not much is known of Holt's coinage except that Newman has identified six pairs of dies. Restrikes made in 1828 with original dies were struck from a pewter-like metal whereas the

1. This arrangement differed from the Massachusetts Bay Mint where minting costs for "Boston Money" were the responsibility of the individual who brought specie to the mint for recoinage, and were not assumed by the Province.

2. Craig, London Mint, 221.

3. Seaby, English Coinage, 92.

4. Craig, London Mint, 178-179; Seaby, English Coinage, 79; Peck, British Museum, 105-107, 118.

5. Eric P. Newman, "First Documentary Evidence of the American Colonial Pewter 1/24th Real", The Numismatist (Vol. LXVII, July 1955), 713-717.

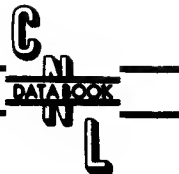
Table VI

Mint Costs and Profits for Royal Mint Tin and Copper Halfpence.

Year period	: 1672	: 1672-1675	: 1685-1692	: 1694-1701	: 1717-1724	: 1729-1754	: 1770-1775
Price copper/lb.	12 d.	12 d.	n.a.	12 d.	13 d.	values included below	
Processing	nil	nil	n.a.	3 d.	4.25 d.		
Swedish Tax	nil	2.5 d.	n.a.	nil	n.a.		
Total cost/lb.	12 d.	14.5 d	n.a.	15 d.	17.25 d.	15.75 d.	15.75 d.
Price tin/lb.	n.a.	n.a.	8 d.	n.a.	n.a.	n.a.	n.a.
Mint fees	4 d.	4 d.	4 d.	2.8 d.	4.64 d.	4.61 d.	4.11 d.
TOTAL COSTS	16 d.	18.5 d	12 d.	17.8 d.	21.89 d.	20.36 d.	19.86 d.
Halfpence/lb.	40	44	a) 40 b) 42	42	46	46	46
Authorized weight (grains)	175.0	159.1	a) 175.0 b) 166.7	166.7	152.2	152.2	152.2
Average observed weight (grains)	169.5	169.5	a) 170.9 b) 167.2 to 169.7	156.9 to 161.9	150.0	153.3 to 153.7	153.4
Monetary value per lb. avdp.	20 d.	22 d.	a) 20 d. b) 21 d.	21 d.	23 d.	23 d.	23 d.
Profit to Crown or contractor per lb. avdp.	4 d. crown	3.5 d. crown	a) 8 d. b) 9 d. crown	3.2 d. contractor	a) 1.11 d. contractor b) 1.31 d. crown	2.64 d. crown	a) 0.14 d. discount b) 2.16 d. crown
Profit/TOTAL cost % profit	25 %	18.9 %	a) 66.6 % b) 75 %	18.0 %	a) 11 % total	13 %	10.9 %
Notes: (The lb. is avdp.)	1,2,3,4.	1,2,3,4.	1,3,5,6,8.	1,3,7,8,9, 10,11.	1,3,11,12, 13,14.	1,3,8,11, 15,16,17.	1,3,11,18.

Notes for Table VI

- (1) Data from Craig, London Mint, xv, 175, 178, 221, 416, 427-428.
- (2) Data from Peck, British Museum, 106, 140.
- (3) Data of observed weights from Peck, British Museum, 620-621.
- (4) These imported planchets were ready to strike. Later in 1672 a 2.5 d. Swedish export tax was imposed thus raising the production costs. The weight of the coin was appropriately adjusted with a greater yield per pound of copper. The profit to the crown was decreased by 1/2 d.
- (5) Data from Peck, British Museum, 107, 147, 151.
- (6) No tin halfpence of Charles were made, only tin farthings.
 - (a) Halfpence were minted under James II from 1685 to 1687 at 20 d. to the pound, or a 66.6 % profit to the Crown.
 - (b) Under William and Mary from 1689 to 1692 the tin halfpence were coined at 21 d. to the lb. or a profit margin of 75 %.
- (7) Peck, British Museum, 151-153, 167-169.
- (8) The range in average weights is obtained since Peck calculated averages for each type of coin of the period.
- (9) William and Mary halfpence (1694) were made of English copper on rolled and cast blanks, whereas those of William III were from cast blanks of generally inferior quality to the Swedish copper of Charles II.
- (10) The profit for William and Mary and William III coinage went to the contractors who coined for the Mint. The cheaper production methods for the William III coins are held responsible for the poorer quality of the series (Peck, British Museum, 168).
- (11) The processing costs included the preparation of metal fillets (strips) to the proper dimensions ready for cutting (Ruding, Annals of Coinage, Vol. II, 74).
- (12) Data from Peck, British Museum, 198.
- (13) The price of copper and Mint charges had increased reflecting a change in the issues of George I when more small copper coins were needed in 1717.
- (14) Craig (London Mint, 427) notes a Crown profit of 1.31 d. and an actual face value of 23.2 d. per lb., whereas a face value of 23 d. would reduce the king's profit to 1.11 d. or 5 %.
- (15) Data from Peck, British Museum, 204; Craig, London Mint, 250; and Ruding, Annals of Coinage, Vol. II, 74.
- (16) Under the reign of George II, the cost of prepared fillets (metal strips) reduced to 15.75 d. per lb.
- (17) Mint costs include the mint master's fee of 4.5 d. per lb. and fee to the king's clerk of 20 s. per μ longß ton.
- (18) There was a 0.14 d. per lb. allowance for the purchase of halfpence from the Mint. Considering this discount as a cost, the Crown's profit was 10.8 %.



original 1688 issues were from pure tin (1). Prime, writing in 1861, rejected these 1/24th real pieces as belonging to the American colonial series since there was no evidence for local circulation (2). Crosby likewise excluded this tin from his consideration (3), although Atkins in his 1889 The Coins and Tokens of the Possessions and Colonies of the British Empire included them (4). Taxay suggests that an attempt may have been made to distribute Holt's tin money in Philadelphia in 1698 since in that year local business men petitioned the Crown against "'leaden and pewter farthings' that were about to be sent over." (5) The exact role these interesting coins played in America remains to be defined.

The St. Patrick halfpence, a coin of English origin, is a definite part of the colonial series, having been authorized for circulation in New Jersey. This coinage, also known as the Mark Newby halfpence, is thought to have come from the Tower Mint during the reign of Charles I around 1645 from dies engraved by Nicholas Briot and punch-linked to his Scottish pieces (6). The obverse portrays Charles I as King David playing his harp while the reverse depicts St. Patrick and his followers. Such designs explain why this coinage was not circulated during the anti-royal and anti-Catholic climate of the Commonwealth. They first appeared on the Isle of Mann in 1680 where they were rejected. Mark Newby, an English Quaker, who emigrated from Dublin to New Jersey in 1681, brought a large quantity of these halfpence with him. Due to the shortage of money, these coins were authorized by the New Jersey Assembly the following May to pass as small change. The exchange rate for these coppers was not specified in the enabling legislation except by the vague phrase "for pay Equivalent." In 1682, the exchange rate for New Jersey, as determined by New York and Philadelphia, was 133.33:100, money of account to sterling. "Pay Equivalent" would therefore be eighteen coppers to the New Jersey shilling (7).

There is also a St. Patrick farthing, not mentioned in the original legislative authorization of May 1682, which is far more common than the halfpence. While there is no clue how these farthings arrived in the New World, their presence reported in hoards suggests that they circulated in the colonies although this point is debated (8). A weight discrepancy exists

1. Eric P. Newman, Coinage for Colonial Virginia, Numismatic Notes and Monographs #135 (New York, 1956), 1n., hereafter cited Colonial Virginia.
2. Prime, Coins, Metals and Seals, C.M.S. - 7.
3. Crosby, Early Coins, 348.
4. James Atkins, (London, 1889), 249-265, hereafter cited Coins and Tokens.
5. Taxay, Comprehensive Catalogue, 8.
6. Taxay, Comprehensive Catalogue, 39; Walter Breen, "Comments on St. Patrick Halfpence and Farthings", CNL, 214-217; Crosby, Early Coins, 135-138; Robert A. Vlack, "Die Varieties of St. Patrick Halfpence", CNL, 199-202.
7. McCusker, Money and Exchange, 157, 175.
8. Walter Breen, "Additional Comments on St. Patrick Farthings", CNL, 214-215, 233. Eric P. Newman questions whether the St. Patrick farthings ever circulated in America. (See "Circulation of St. Patrick Farthings in America", CNL, 220).

between the farthings and halfpence with the former weighing about 95 grains and the latter about 137 grains, these values extrapolated assuming perfect specimens (1). Using these data, Table VII was constructed in a similar fashion to Table VI, demonstrating the potential profit to the minter and utterer. The relative values are expressed in sterling for England and in New Jersey money of account, the relationship between each being 100:133.33 at that time. Freight costs to America are based on rates of £ 3 10 s. per long ton to New York, or 0.375 d. per pound (2).

TABLE VII

Relative weights, presumed mint costs, and profits for St. Patrick halfpence and farthings in England and following export to New Jersey based on the current exchange rate of 100:133.3.

St. Patrick Coin	Halfpence	* Farthings	: Halfpence	* Farthings
Values Expressed	in English Sterling per lb., avdp.		:	in New Jersey Money per lb. avdp.
Assumed weight	137 grains	95 grains	137 grains	95 grains
Coins per pound	51.1	73.7	51.1	73.7
Mint costs/pound	16.0 d.	16.0 d.	21.3 d.	21.3 d.
Monetary value/lb.	25.5 d.	18.4 d.	34.1 d.	24.6 d.
Freight costs	nil	nil	0.4 d.	0.4 d.
Total costs	16.0 d.	16.0 d.	21.7 d.	21.7 d.
Profit	9.5 d.	2.4 d.	12.4 d.	2.9 d.
Profit/total cost	59 %	15 %	57.1 %	13.4 %

The assumed mint costs of 16.0 d. per pound of copper are based on known costs from 1672, but of course cannot include any extra for inclusion of the brass splasher on the coin. The freight costs are rounded from known costs of 0.375 d. per pound from London to New York in 1708.

Inspection of Table VII shows that the St. Patrick farthing to halfpence weight ratio is not the expected 1:2 but rather 1:1.44 suggesting a different relationship other than farthing to halfpence or that they were not companion coinages. One solution to this problem proposes that the St. Patrick "farthing" may actually have been the legal tender coin recognized by New

1. Farthings: average weight of eleven specimens from the Roper and Garrett Sales was 94.3 +/- 10.0 grains; Halfpence: average weight of eight specimens from the Roper Sale was 135.6 +/- 11.3 grains. The relatively high error indicates lack of uniformity in weight; hence these values are only approximate at best. (The John L. Roper, 2nd. Collection of Colonial and Early American Coins, Stacks (New York, Dec. 8-9, 1983), lots 48-55, 58-67; The Garrett Collection Sales, Bowers and Ruddy (Los Angeles, Oct. 1-2, 1980), lot 1385.

2. Nettles, Money Supply, 72n.

Jersey and that the larger sized coin, which we call the halfpence, may actually have been a penny, but too few in number to deserve any special consideration by the New Jersey Assembly (1). Some support for this theory was offered by D. T. Batty, who, writing in 1886, spoke of St. Patrick pennies and halfpence (2). If, indeed, what we call the farthing had passed as a halfpence, this would have substantially increased the profit margin to about 126 % for the minter/utterer (3). As for the larger coin, the 1:1.44 weight ratio suggests that it might have been intended as a three-farthing piece if the small issue were halfpence. Silver three-farthing pieces had been issued under Elizabeth I from 1561 to 1582 and so this speculation is not unwarranted; since some explanation for the weight relationship between the two St. Patrick pieces must be found, other than farthing/halfpence, if we assume they are related, and not a pair of coincidental tokens. Peck (4) describes a similar confusion regarding the assignment of denomination for some of the pattern pieces of Elizabeth I; thus the question raised regarding the designation of the St. Patrick coinage is not without precedent and is an area for further numismatic research.

There are other tokens of the late seventeenth century which pertain to the American Colonies. Included in this group of very rare tokens are the 1694 Carolina and New England Elephant pieces which may have been intended as medals to promote interest in the new colonies (5). Placed between 1664 and 1710 is the equally rare New York Token which is probably of Dutch origin (6). Crosby speculated that the few surviving specimens may have been trial pieces of a coinage which was never produced in numbers because of intimidation engendered by the Proclamation of 1704 (7). Taxay believes that the coin may have been manufactured in the early nineteenth century, and reports that it has been found within assortments of Civil War tokens (8).

The story of William Wood, a wealthy English mine operator, adds an interesting dimension to the study of American Colonial numismatics and Irish nationalism. In the early years of the eighteenth century, Ireland, under English domination, was so severely lacking for "small money" that workers were paid "with tallies or tokens in cards, signed upon the back, to be

1. John J. Horan, "Some Observations and Speculations on St. Patrick Halfpence and Farthings", CNL, 567.
2. Descriptive Catalogue of the Copper Coinage of Great Britain, Ireland, British Isles, and Colonies, Local & Private Tokens, Jettons & c., Volume III (Regal Issues), (Manchester, 1886) #1605, 821.
3. If 73.7 farthings per pound passed as "halfpence" at 18 to the N.J. shilling, then the fixed costs of 21.7 d. would have produced a monetary value of 49.1 d. per pound of farthings, or a handsome 126.4 % profit !
4. British Museum, 10-12.
5. Crosby, Early Coins, 337-338; Taxay, Comprehensive Catalogue, 8, 39; Atkins, Coins and Tokens, 259-260; Peck, British Museum, 137-138.
6. Atkins, Coins and Tokens, 258; John W. Adams, "Original Manuscript of 'The Earliest New York Token' for Historical Magazine", CNL, 736-739.
7. Crosby, Early Coins, 114, 345-346.
8. Taxay, Comprehensive Catalogue, 37-38.

afterwards exchanged for money; and counterfeit coins, called raps, were in common use, made of such bad metal, that what passed for a halfpenny was not worth half a farthing." (1) A patent for issuing farthings and halfpence for Ireland was obtained by the king's mistress, the Duchess of Kendal, which she subsequently transferred to Wood for £ 10,000 on June 16, 1722. This new patent entitled its owner to produce 360 tons of coins at 30 pence, Irish money (2), to the pound of copper over a period of fourteen years (3), which is quoted as being "an absurd amount, almost one-fourth the total value of all the Irish currency." (4) At that time Ireland was economically destitute with deplorable living conditions. Jonathan Swift, the Protestant Episcopal Dean of Dublin's St. Patrick Cathedral, had become a local hero striking out with "indignation against English tyranny in Ireland." "Burn everything that comes from England except the coal" was one of his injunctions to his countrymen (5). When Wood's coinage was prepared for the Irish without their knowledge, consultation, or consent, Swift attacked the action in a series of seven letters purportedly penned by a Dublin shopkeeper, a draper or drapier, signed anonymously "M. B. Drapier." (6) This savage diatribe against Wood and his profiteering at the expense of "an impoverished voiceless people" prompted the minter to counter with the injudicious retort "that he would cram his brass (7) down their throats in spite of them." However, Swift's position prevailed and the coinage was subsequently withdrawn while Wood was compensated with a grant of £ 24,000.

While this account is frequently repeated, less has been publicized in defense of Wood who would have lost money over the course of fourteen years had the full terms of the patent been met, a circumstance hardly deserving of the term "profiteering." In addition to the cost of the patent at £ 10,000, Wood was assessed an annual fee of £ 800 for the king, £ 200 for the king's

1. Ruding, Annals of Coinage, Vol. II, 68-73, quote from 68. This passage refers to a "rap," a counterfeit Irish halfpence of the period or a coin of trifling value, giving rise to the expression, "I don't give a rap."
2. At that time the exchange rate between England and Ireland was 100:108.33, so that 30 d., Irish money, was worth 27.75 d., English sterling. (McCusker, Money and Exchange, 34.)
3. Philip Nelson, The Coinage of William Wood 1722-1733 (London, 1903, reprinted 1959), 9-14, hereafter cited as William Wood; Craig, London Mint, 370-371; Arthur Lyon Cross, A History of England and Greater Britain (New York, 1914), 691.
4. Charlotte Gale and David M. Gale, "Jonathan Swift and the Irish Coinage of William Wood", The Numismatist, Volume 98, #7, (July 1985), 1333, hereafter cited, "Jonathan Swift".
5. David F. R. Wilson, Dean Swift (Dublin, 1941), 20-21.
6. The article by Gale and Gale, "Jonathan Swift", discusses the content of Swift's clever declarations in the Drapier Letters.
7. Nelson, William Wood, 13. "Brass" in this sense is "a generic term for copper money, as well as a slang term for money in general." Into the seventeenth century, "brass" was a synonym for "copper." (CNL, 418.)

TABLE VIII

A: Production Costs of Wood's Hibernia Coinage; Full Weight (60 halfpence/lb. or 116.7 grains each); and Reduced Weight (1) (65.12 halfpence/lb. at an average of 107.5 grains each).

B: Net Profit (Loss) Figured over the Terms of the Patent of 14 Years and 360 (Long) Tons of Copper.

A: Production Costs	Authorized Weight	Reduced Weight
Mint costs/lb. copper		
English (2)	22 d.	22 d.
Number halfpence/lb.	60	65.12
Weight halfpence	116.7 grains	107.5 grains
Monetary value/lb. (3)		
English	27.69 d.	30.06 d.
Irish	30 d.	32.56 d.
Profit, English	5.69 d.	8.05 d.
Profit/cost, English	25.86 %	36.59 %

B: Profit (Loss) for Term of Patent Over 14 Years.

Monetary Value (3)		
English	£ 93,049	£ 100,989.2
Irish	100,800	109,401.6
Mint costs, English (3)	73,920	73,920
Cost of Patent	10,000	10,000
Fees to King/Clerk	14,000	14,000
Total costs, English	97,920	97,920
Profit (Loss), English	(4,871)	3,069.2

Notes: (1) The reduced weight of 107.5 grains is from the analysis of James Simon, quoted in Ruding, Annals of Coinage, Vol. II, 69 and Nelson, William Wood, 11. Simon measured four samples of halfpence sent to Ireland to arrive at this value. (2) The mint costs of 22 d./lb. are from Nelson, William Wood, 10, and closely agree with Table VI for mint costs of the period. Costs for minting one pound of copper: metal 14 d., planchet preparation 5 d., and coining 4 d. (3) The monetary values, English and Irish, are based on the exchange rates of the period 100:108.33 (McCusker, Money and Exchange, 34). Nelson ignored this important factor in his calculations.

360 long tons = 806,400 lbs; at 30 d./lb = £ 100,800 (Irish)
£ 100,800/108.33 (exchange rate) = £ 93,049 (English).

clerk comptroller, and from his profits, Wood had to pay charges for transportation, distribution, and Irish customs on his coins. These data are recorded in Table VIII where it is noted that at 60 halfpence to the pound, or at a weight of 116.7 grains per halfpence, Wood would have incurred a net loss of about £ 4,871 over the fourteen year term of the agreement. Nelson made similar calculations but he made some errors in arithmetic and ignored

exchange rate differential between England and Ireland (1). Wood apparently reduced the average weight of the halfpence to 107.5 grains (2) since with this modification, some minimal profit was derived. The Irish, in denouncing the fraud perpetrated upon them by Wood's coinage, considered only the intrinsic value of the copper at 12 d., Irish, per pound, and ignored the costs of planchet preparation and the various mint fees and royalties. From the perspective of excluding labor and manufacturing costs, 360 tons of copper coins passing at £ 100,800 (Irish) would indeed have incurred a loss of £ 60,480 to the Irish public (3). The mint costs could not be waived, and when these were borne by Wood, he suffered an economic loss as further explained in Table VIII. When Wood's coinage was rejected by the Irish and did not circulate, the Crown indemnified him for his efforts with a pension of £ 3,000 annually for eight years. Of the several tons of coppers already minted before the project was cancelled, large numbers found their way to America and are seen in accumulations of various and sundry other coins of the period and are indirectly considered part of the colonial series (4).

There is possibly more to this story of Irish nationalism than just patriotism. Craig notes that that Swift "distorted" Wood's project at a time when he suffered personal disappointment at having been denied a bishopric (5). He further elaborates that certain Irishmen created such ferment about Wood's Hibernia coinage because members of the Irish Parliament, themselves, were profiteering from the issue of token coppers. In 1729, Swift proposed a token scheme to which he, himself, would be a party, but nothing ever materialized from that venture (6). No acceptable solution to the Irish small money shortage appeared until 1736, when under George II, regal farthings and halfpence at the rate of 104 and 52 to the pound, respectively, were authorized (7). Any profits derived from production of these coins after deduction for mint costs and transportation, would be deposited in the Irish public treasury, a conciliatory gesture to assuage anti-English sentiment after the Wood affair.

In 1760, after a few years' lapse in the minting of regal Irish coppers, there appeared from Dublin a lightweight token coinage of uncertain

1. William Wood, 10-11.
2. An analysis of Wood's Hibernia coinage by James Simon determined the average weight of four samples of halfpence to be 107.5 grains (quoted in Ruding, Annals of Coinage, Vol. II, 69.)
3. Again the analysis by Simon appears designed to vilify Wood since Simon omitted the fixed costs of manufacturing the copper coinage in calculating its value. Also Simon quoted the current price of copper at 12 d. per pound (Irish) when the current price at the Tower Mint was actually 13 d., sterling, or 14.1 d., Irish.
4. Breen, "Additional Comments on St. Patrick Farthings", CNL, 233; Prime, Coin, Metals and Seals, C.M.S.-7.
5. Craig, London Mint, 370-371.
6. Ruding, Annals of Coinage, Vol. II, 73.
7. Ruding, Annals of Coinage, Vol. II, 75-76.

provenance, the Voce Populi farthings and halfpence (1). While included in the American Colonial series, this money was primarily Irish, although without doubt, some pieces could have serendipitously arrived in the New World along with other European coins of the period, and, therefore, be located in old accumulations (2). Other than this possible chance relationship, there is no convincing American Colonial link with the Voce Populi series. Later the regal Irish halfpence of George III, as well as counterfeits, play a distinct role in the numismatic history of Confederation coppers as will be subsequently related.

On July 12, 1722, William Wood was also granted a patent to mint 300 tons of coppers for the North American Colonies over a span of fourteen years for an annual fee to the Crown of £ 300 (3). The resultant Rosa Americana coinage was handsomely engraved and struck in Bath metal, an alloy of 50% copper, 45% zinc, and 5% silver. Since the planchets had to be impressed while the metal was hot, these coins frequently display a bubbly surface. The twopence, penny, and halfpence denominations of this emission are dated 1722, 1723, and 1724. One pound of alloy was to produce 120 halfpence, thus securing a substantial profit for the patentee (4). The obverse depicted the laureated head of George I, while a Tudor rose with the inscription ROSA AMERICANA, UTILE DULCI was on the reverse (5).

Wood was no more successful in his Rosa Americana venture than he was with the Hibernia series since his lightweight, over-valued coins needed more than an "agreeable" appearance to be acceptable as money by the colonists. There is evidence (6) that some Rosa Americana coins did circulate, although

1. Craig, London Mint, 372.
2. No mention is made of Voce Populi coppers by Crosby, Atkins or Prime. The question is asked (CNL, 254), why are these Irish pieces included in the colonial series? Jerry Zelinka, "The Enigmatic Voce Populi Halfpenny of 1760", CNL, 555-565, presents an excellent review of this series replete with descriptive plates. His historical search concludes that late nineteenth century numismatists and dealers must have associated them with Bungtown evasive halfpence (q.v.) and the like, which is not sufficient proof of a colonial connection.
3. Nelson, William Wood, 15-18, 25-32; Crosby, Early Coins, 145-168; Taxay, Comprehensive Catalogue, 9-13.
4. The alloy cost about 16 d. per pound, considering that it contained about 2.4 d. of silver. All other manufacturing expenses would be no more than 9 d. At 120 halfpence to the pound, there was a potential profit of 35 d. per pound of alloy or 140 % !
5. The UTILE DULCI inscription is from Horace, Ars Poetica, 343, "Omne tulit punctum qui misquit utile dulci" ("He has won universal approval who has combined the useful with the agreeable"). It is intriguing to speculate why Wood chose this passage. Did he think that because his coinage was so handsome that it would be well received? The complete quotation appeared on the masthead of the Essex Gazette (Salem, Mass.) from 1768 to 1771.
6. Breen, "Additional Comments on St. Patrick Farthings", CNL, 233; Newman, Colonial Virginia, 33.

with disapproval, due to numbers found in accumulations and excavated in Colonial Williamsburg. The rejection of Wood's underweight coinage came at a time when the small change shortage was so intense in Massachusetts that the General Court had authorized issuance of £ 500 in parchment notes of penny, twopence and threepence denominations (1). The failure of the Rosa Americana series to win the confidence of the colonists explains why so many uncirculated specimens have survived until present times (2). The last heard from William Wood, before he died in 1730, was his proposal to the Board of Trade to mint coins in gold and silver for the colonies at 75% of the sterling rate, a scheme which never survived the planning phase (3). Although William Wood was gone, he was not forgotten, since memories of his underweight coinages were recalled during the Coppers Panic of 1789 (q.v.).

In addition to the efforts of William Wood, numerous other proposals for colonial coinage were submitted throughout the seventeenth and eighteenth centuries, in that "nearly every important colony asked to be allowed to set up a Mint." (4) Many of these petitions originated in England but none of them were ever granted. Sumner (5) opined, "It was one of the greatest mistakes in the colonial policy of England that a colonial mint was not allowed." The only proposal for a legal colonial coinage which ever materialized was the 1773 copper halfpence for Virginia, an action which was permitted by charter. A summary of eight recorded propositions for colonial coinage is listed:

- 1) 1638: a license was granted to Lord Maltravers to produce farthing tokens for America which was never accomplished (Newman, Colonial Virginia, 3-4; Hoober, "Financial History of Colonial Virginia", 2-3).
- 2) July 5, 1700: a proposal by John Fysack to the Board of Trade to establish a colonial mint (Crosby, Early Coins, 139; Chalmers, British Colonies, 13; Ruding, Annals of Coinage, Vol. II, 59).
- 3) May 21, 1701: a proposal by Samuel Davis to mint small copper coins for the colonies which was apparently seconded by J. Stanley, Isaac Newton and John Ellis on July 9, 1701 (Crosby, Early Coins, 139-141).
- 4) March 17, 1702/3: from William Chalkhill to produce coppers for Massachusetts (Crosby, Early Coins, 224-225; Chalmers, British Colonies, 19).

1. Crosby, Early Coins, 148-150; Felt, Mass. Currency, 78. The penny note was round, the twopence rectangular, and the threepence hexagonal, and all dated June 1722.
2. One of Wood's partners was said to have had great quantities of Rosa Americana coins in his cellar since there was as much trouble passing them as the Hibernia series (Crosby, Early Coins, 160; Nelson, William Wood, 15).
3. Chalmers, British Colonies, 17.
4. Chalmers, British Colonies, 12n.
5. "Coin Shilling", 253-254. England would give her colonies no economic advantage which might threaten the established mercantile system. (See Nettles, Money Supply, 283.)

5) April 5, 1715: Jeremiah Dummer reported a proposed billon coinage of one-third copper and two-thirds silver for New England (Crosby, Early Coins, 141-142; Felt, Mass. Currency, 69).

6) 1739: John Reed of Boston petitioned the Connecticut Legislature for a patent to mint a Connecticut coinage from local copper (Crosby, Early Coins, 203-207). (See Higley coinage)

7) July 14, 1748: Sir Alexander Cuming proposed the establishment of a provincial bank for all British colonies in America and a sterling coinage from the Tower Mint (Ruding, Annals of Coinage, 17; Crosby, Early Coins, 142-143).

8) 1754: Arthur Dobbs proposed a copper twopence, penny and halfpence for the Carolinas with 61 halfpence per pound. This would have been similar to the 1773 Virginia halfpence. (Crosby, Early Coins, 143-144; Chalmers, British Colonies, 19; Ruding, Annals of Coinage, Vol. II, 80.)

The first domestic copper coinage in the colonies is attributed to Dr. Samuel Higley of Granby, Connecticut, a physician, metallurgist, and local mine operator, who, in 1737 minted three pence tokens of pure copper (1). Seven die varieties of this excessively rare money have been identified with varying legends. It would appear that the earlier inscription, THE VALUE OF THREE PENCE, gave way to the revision, VALUE ME AS YOU PLEASE, since it was unlikely that a New Englander who rejected Wood's coinage would accept any other copper which passed for about ten times intrinsic value (2)! Crosby suggested that the Higley coppers are so rare today because they were high quality copper was in great demand by goldsmiths for use in alloys.

The final authorization for the Virginia copper halfpence was signed on May 20, 1773 after several months of negotiations with English authorities (3). This coinage struck at the Tower Mint was to weigh 60 to the pound and at a production cost of 20.86 d., sterling, a profit of 16 % accrued to the colony before transportation and insurance costs were deducted. These well made coins with the bust of George III on the obverse and the Virginia crest on the reverse with the legend, VIRGINIA, were to pass at 24 to the Virginia shilling. The shipment arrived in America on February 14, 1774 but distribution was delayed until royal permission was received one year later, or only fifty days prior to the start of the Revolutionary War. Consequently, the Virginia halfpence were hoarded and saw little circulation

1. Crosby, Early Coins, 324-327; Taxay, Comprehensive Catalogue, 13-14.
2. The average weight of the ten Higley specimens from the combined Garrett Collection (lots, 1304, 1305 and 1307) and the Roper Collection (lots 148 to 154) is 142.06 grains, less than the weight of the current British halfpence. A pound of copper would, therefore, produce 49 threepence tokens at a market value of 12 s. 3 d. At a maximum production cost of 26 d. per lb. in Connecticut money, Dr. Higley would realize about 465 % profit. Little wonder the legend was changed!
3. Newman, Colonial Virginia, passim. This excellent monograph by Newman describes the 22 die varieties. Taxay, Comprehensive Catalogue, 14; Crosby, Early Coins, 338-340.

until after hostilities had ceased. Virginia halfpence obviously did circulate since many have been recovered in the excavations and restorations at Colonial Williamsburg (1). The availability of brilliant, uncirculated specimens today is due to the cache of coins which were never placed in circulation and came into the possession of Colonel Mendes I. Cohen of Baltimore sometime around 1870 (2).

As previously described, the chief gold and silver money which circulated in the colonies was from Spanish America, Spain, France, Portugal, the United Provinces of the Netherlands, and other mercantile countries, except England which forbade export of her specie. English copper was not restricted from colonial use and was the principal minor coinage in her American possessions. In fact, it was estimated that about £ 85,000 in English farthings and halfpence were exported to America from 1695 to 1775 which approximated 20 % of the total minted (3). Several large shipments have been documented including £ 300 sent to Philadelphia in 1682 (4) in addition to the 1749 allotment of £ 2141 to Massachusetts.

English officialdom looked upon copper coinage in a rather condescending manner while at the same time acknowledging its utility. The account written in 1757 by the king's assay-master, Joseph Harris, documents this attitude (5).

Copper coin with us are properly not money, but a kind of tokens passing by way of exchange instead of parts of the smallest pieces of silver coin; and as such, very useful in small home traffic. ... A silver penny is too small for common use; and yet pence, and their halves, and quarters enter daily into accounts. To supply the want of very small silver coins, a kind of TOKENS or substitutes have been instituted; these are now with us, all made of copper, and of two species only, called half-pence, and farthings; and these are a legal tender in all sums below sixpence ... But these base coins should never be thrust upon the public in too great abundance; or be made to pass for more than the value of the copper, and the necessary expense of workmanship; otherwise they will be counterfeited, notwithstanding any laws to the contrary.

1. Newman, Colonial Virginia, 33.
2. See also Breen, "Coin Hoards", 16-17.
3. Craig, London Mint, 251-252. This would be £ 425,000 of copper coinage over an 80 year span for all England. This is an interesting comparison to Wood's Hibernia patent (q.v.) which was £ 100,800 over only fourteen years, indeed, an "absurd" and exaggerated estimation of Irish needs for small change.
4. CNL, 589, 609.
5. An Essay upon Money and Coins, 1st edition, 45, as quoted in Peck, British Museum, 204 and Francis Pierrepont Barnard, "Forgery of English Copper Money in the Eighteenth Century", Numismatic Chronicle, Fifth series, Vol. VI (1926), 343-344.

PLATE VI

Colonial American coppers. Illustrations enlarged 1.5 X.



Figure 1: An uncirculated 1723 Rosa Americana two-pence with the reverse crowned rose (Nelson - 14), weighing 220 grains. Although a handsome coinage, its deficient weight and low intrinsic value proved unpopular.

Figure 2: An uncirculated 1773 Virginia halfpence (115.3 grains), the only colonial coinage with official English government sanction.



The royal authority did not heed all Harris' advice, and minted copper at a substantial profit as noted in Table VI. When the intrinsic value of the copper was low in comparison to the monetary value, as in the case of Wood's Rosa Americana and Hibernia coinages, the money was rejected. In fact, Virginia officials were fearful that the 1773 halfpence coinage of that colony might not be accepted due to the low intrinsic value of about 52.5% (1). Nonetheless, the high relative minting costs for copper had to be included in the commercial value of the money. However, as Harris predicted, when coppers were minted at a substantial profit above the legitimately incurred costs and fees, counterfeiting was invited and was to become a significant problem as will be related.

By 1770, most colonies had published exchange rates for the regal English halfpence which was the prevalent small change of the plantations. These rates are enumerated in Table IX but there is no differential for the heavier coins of 1672 to 1701. Based on the established value of the Spanish American eight reales, the genuine regal halfpence was overvalued in New York in 1750 at twelve to the colonial shilling, creating a flow of coppers into that colony from adjacent Massachusetts and Pennsylvania where the rate of exchange for halfpence, in comparison to the Spanish standard, was more accurately reflected (2). To curb this stream of coppers into the colony where they were overvalued and had more purchasing power, New York, in 1753, devalued the halfpence and established an equilibrium in the movement of English halfpence from its neighboring plantations. This was accomplished by increasing the exchange ratio to fourteen coppers per colonial shilling, without discrimination as to the weight of the copper (3). This is summarized in Table X. (See also Appendix I.)

The exchange ratios for English halfpence (Table IX) held well for royal coppers of consistent weight until 1787. Circumstances were significantly altered when debased, lightweight, and counterfeit coins were introduced into commerce and public confidence in the circulating token copper coinage weakened. As it was, the intrinsic metallic value of English coppers was approximately 50% of monetary value, therefore, public acceptance was delicate at best for this token coinage. Due to the potential profits for the unscrupulous, counterfeiting of coppers became a prevalent social evil just as Harris predicted.

As early as 1698, reports circulated from Philadelphia (4) of "large numbers of lead and pewter farthings and halfpence" with the warning "that they should be 'wholly suppressed' because of the damage they can do ...only those of Copper which are the King's Coyn may pass the farthings for two

1. Newman, Colonial Virginia, 10-11, 20.
2. Eric P. Newman, "American Circulation of English and Bungtown Halfpence", Chapter 10 in Newman and Doty, Studies on Money, 143-144, hereafter cited, "Bungtown Halfpence." This is an excellent essay.
3. Crosby, Early Coins, 291. "Without discrimination" makes no distinction regarding genuine or counterfeit, or whether full or under weight.
4. Scott, Colonial Pennsylvania, 9-10.

TABLE IX

**Exchange Rates for Regal English Halfpence
in the Various Colonial Moneys of Account.**

Colony	Reference Year	Number of English Halfpence per Colonial Shilling	Notes
New Hampshire	1765	18	1
Massachusetts	1750	18	1,2
Rhode Island	1763	18	1
New York	1750	12	1
	1753	14	1
New Jersey	1750	15	1
Pennsylvania	1698	12	3
	1741	15	4
	1750	15	1
Maryland	1754	18	1
Virginia	1770	19	5
North Carolina	1768	12	1
Georgia	1735	24	1

Notes: Georgia remained at par with England.
Connecticut never assigned an official value to the English halfpence.

- (1) Newman, "Bungtown Halfpence", 143-154.
- (2) Felt, Mass. Currency, 128.
- (3) Scott, Colonial Pennsylvania, 9-10.
- (4) Crosby, Early Coins, 170.
- (5) Newman, Colonial Virginia, 10.

TABLE X

**Relative Ratings of English Halfpence in
England, Massachusetts, Pennsylvania and New York
in Local Moneys as Determined by the Eight Reales
Standard (Newman, "Bungtown Halfpence", 143-144).**

Locality	1750 Rate for Eight reales, in local money	Number of Halfpence per Local Shilling Theoretical * Actual	
England	54 d.	24.0	24.0
Massachusetts	72 d.	18.0	18.0
Pennsylvania	90 d.	14.4	15.0
New York	96 d.	13.5	12.0

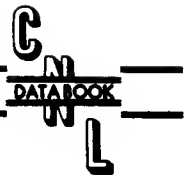
In 1750, the halfpence was overvalued in New York by 1.5 d., and undervalued in Pennsylvania by 0.6 d., or a 2.1 d. differential. The flow of coppers into N. Y. was stemmed when the exchange rate was advanced to 14 per N. Y. shilling in 1753, causing a slight undervaluation based on the sterling rate.

a penny & the half pence for a penny."⁽¹⁾

In Massachusetts, in 1700, counterfeit money of "brass and Tin" was the subject of a legislative action which punished any persons who "shall presume to make or Stamp any such peices [sic] ... and to Emit, utter, or put off the same for pence"⁽²⁾ Breen has tentatively identified these counterfeits as cast brass William III halfpence and cast tin farthings of Charles II ⁽³⁾. Newman and Gaspar ⁽⁴⁾ have described a hoard of cast counterfeit William III halfpence dated 1699 discovered during a highway excavation in Philadelphia in 1975. It was postulated that these sand cast pieces were made in England around 1725 and imported prior to 1735 ⁽⁵⁾. The 1735 exchange rate in Pennsylvania should have required 14.4 halfpence to the shilling, not twelve as was legally sanctioned. This was a 2.4 d. overvaluation per Pennsylvania shilling of coppers, thereby securing a 20% profit for anyone who imported halfpence. This overvaluation of halfpence enticed both genuine and counterfeit coppers into the region creating an overabundance. This surplus of small money led in turn to public unrest when merchants objected to the established rate of twelve to the shilling. Some minor riots ensued in 1741, resulting in a revaluation of halfpence to fifteen to the Pennsylvania shilling more in keeping with the exchange rate as recorded in Tables IX and X ⁽⁶⁾. Newman and Gaspar suggested that the owner of these counterfeit William III coppers dumped them during this period of agitation when there was even a problem passing genuine coins, let alone spurious pieces. This situation of improperly valued money was not unlike what has been described in New York in 1750, demonstrating that the circulation of currency depends on exchange rates and local economic factors, the study of which becomes an integral part of numismatic history.

Counterfeit halfpence became prevalent in England after 1725 when genuine coins were melted down and reminted into lightweight counterfeits of William III ⁽⁷⁾, certainly the situation in the case of the Philadelphia highway hoard. Soon counterfeiters began to manufacture bogus current halfpence from dies in a coining press rather than casting them in sand. By 1753, in England, it was estimated that about one-half of the circulating copper money was counterfeit ⁽⁸⁾ and where it could be purchased at seven pence a

1. This exchange rate would be twelve halfpence to the Pennsylvania shilling.
2. Crosby, Early Coins, 114-115.
3. Walter H. Breen, "Counterfeit peices of brass and tin", R.F.-44, CNL, 398, 417.
4. Eric P. Newman and Peter P. Gaspar, "The Philadelphia Highway Find", The Numismatist, Vol. 91 # 3 (March 1978), 453-467; Peter P. Gaspar and Eric P. Newman, "An Eighteenth Century Hoard From Philadelphia", Coin Hoards, Vol. IV (London, 1978), 127-130.
5. See also Peck, British Museum, 204-205. Batty (Descriptive Catalogue, Vol. III, 821-822) lists a 1699 William III cast counterfeit in lead or tin and then bronzed.
6. Crosby, Early Coins, 169-170; Newman, "Bungtown Halfpence", 149-150.
7. Peck, British Museum, 204-206.
8. Ruding, Annals of Coinage, Vol. II, 80.



pound (1). This false money easily found its way to America as recorded in the Pennsylvania Gazette of November 15, 1753 (2).

Our Readers are cautioned to beware of counterfeit English Halfpence, great Quantities of which we understand are lately imported. They are of all Kings and Years from King William downwards; but besides being of base Metal, they are much lighter than the true Ones. They may be known by their Colour, Thinness, and Roughness, occasioned by their being cast in Sand. 'Tis said that above Forty Thousand Pounds Sterling in such Halfpence, have been lately made in England; but their Currency being now stopt at home, some evil-minded Persons are buying them up to send to the Plantations. The other Provinces are already on their Guard, and 'tis hoped our People will likewise be too prudent to give them a Currency; since if they can be passed here, our Silver and Gold, to an equal Value, will be carried off in Exchange for them, to the Ruin of the poorer Sort, in whose Hands they must at last sink; since all the Merchants and knowing Dealers, will absolutely refuse them.

Simultaneous stories in The Boston Weekly News-Letter of November 2, 1753 and The Boston Gazette of October 30, 1753 reported the seizure of several bags "of counterfeit Pieces in Imitation of the Copper English half Pence" in the possession of a passenger recently arrived from London. In the same year, a report from New York (3) indicated that the inspection of a bag containing 2880 halfpence revealed no less than 884 sand cast coins of various dates. The unremitting increase of bogus coppers within the Massachusetts Bay Colony came to the official attention of the General Court which noted on March 27, 1755 (4) "as large quantities of counterfeit half pence, of base metal, had been imported, and, with French and other small copper coin continually increase, a committee are ordered to report measures to prevent such practices."

When copper coinage was resumed under George III from 1770 to 1775, counterfeiters even melted down the regal halfpence to produce an enormous quantity of fake coppers (5). It has been reported that over 500 varieties of counterfeits appeared for that same period 1770 to 1775 while there were only 52 royal die varieties (6).

1. Scott, Colonial New York, 102.
2. As quoted by Scott, Colonial Pennsylvania, 86.
3. Scott, Colonial New York, 102.
4. Felt, Mass. Currency, 138.
5. Peck, British Museum, 214.
6. Newman, "Bungtown Halfpence", 169. Batty (Descriptive Catalogue, Vol. III, 928-973) reported 568 different specimens in his collection dated 1770 to 1775 which included many legal issues. He listed copper halfpence dated 1766, 1776, 1777, 1781, 1784, 1787 and 1794 all of which had to be factitious since no regal coppers were minted in those years. Batty also listed 26 other specimens of George III without any date.

Plate VII

Regal and counterfeit halfpence of William & Mary
and William III.



Figure 1: A 1694 copper halfpence of William and Mary, Seaby - 3452 (171.8 grains). This coinage is in the classical Roman and Greek style with the superimposed busts of the king over the queen, indicating the precedence of the former (Peck, British Museum, 152-153). Coins enlarged 1.5 X.



Figure 2: A genuine, but well-worn 1699 Type 3 halfpence of William III, Seaby - 3556 (158.3 grains). The regal coppers of William III generally had inferior workmanship when compared to those of William and Mary since the mint subcontractors compromised quality for increased profits.



Figure 3: A 1699 cast counterfeit Type 2 halfpence of William III from the Philadelphia Highway Hoard. The average weight of these pieces was 111.6 +/- 17.1 grains (Newman and Gaspar, "The Philadelphia Highway Find", 456) whereas the legal standard was 166.6 grains. Peck reported (British Museum, 172) an average weight of 157.3 grains for the regal issue. Photo courtesy of The Numismatist.

Plate VIII
Regal and Counterfeit halfpence of George II. Enlarged 1.5 X.

Figure 1: A genuine 1750 halfpence of George II (146.8 grains), Seaby - 3719.



Figure 2: A dateless, barbarous, contemporary George II counterfeit halfpence which could have deceived only the most unsophisticated (94.3 grains).



Figure 3: Another George II contemporary counterfeit (105.4 grains), dated 17XX, of poor workmanship. This and the preceding coin are doubtless of English origin.



Figure 4: The only Machin's Mill "imitation" halfpence, made in Newburgh, New York, bearing the bust of George II (95.7 grains). Although dated 1747, this coin was probably minted in 1787, and technically is a counterfeit since regal halfpence were minted in 1747.



Plate IX

Regal and counterfeit halfpence of George III. Enlarged 1.5 X.

Figure 1: An underweight (137.3 grains) but genuine 1771 George III halfpence (Seaby - 3774) which is below the 152.2 grains standard.



Figure 2: A very well made contemporary George III counterfeit of English origin, whose spurious nature is apparent after close inspection. This coin, dated 1775 the most common date for the counterfeits of this period, weighs 119.4 grains. This same coin appears on the cover.



Figure 3: Another, but less well made counterfeit of George III, dated 1774, weighing 120.4 grains. Both this and the preceding are of English origin.



Figure 4: A Machin's Mill imitation halfpence, Vlack 11-78A, dated 1778, a year when no genuine coppers were minted. This variety was probably made about 1787. The obverse bust shows the characteristic work of Atlee with a typical familial resemblance to other Connecticut and Vermont obverses.



In England, a 1787 examination of false halfpence stated that "18 percent had tolerable resemblance to the king's coin; 43 per cent were blatantly inferior; 12 per cent were blanks; and the balance [37%] was trash which would disgrace common sense to suppose it accepted for coins"(1). Of local interest, all the George III halfpence excavated at Colonial Williamsburg were counterfeit (2). The counterfeit English halfpence of this era earned the generic name "Birmingham coppers" or "Brummagens" after the city of origin (3). In America the invective "Bungtown" was applied to any counterfeit copper, irrespective of source (4).

This continued influx of base metal coppers resulted in grievances among the merchants, economic losses in commerce, and eroded public trust in the medium. Responding to this situation, the New York legislature on December 12, 1753 imposed a £ 100 fine for anyone convicted of importing counterfeit coppers and a penalty of ten times the value of any false coins passed (5). Several seizures of shipments of imported counterfeit coppers at the ports of Boston and New York and a minor riot in New York were reported in the local newspapers. Bogus coppers had so diluted and debased the circulating currency that there was some discussion in Philadelphia of increasing the exchange rate from fifteen to eighteen coppers per colonial shilling. Apparently the 1753 New York rate increase to fourteen coppers per shilling, the crackdown on illegal imports of "Birminghams," and the heightened general awareness regarding spurious coins, restored public confidence in coppers so that the exchange relationships outlined in Table IX remained quite stable up through the Confederation period until 1787 when significant troubles developed which will be considered in Chapter Eight.

The prime reasons for the abundance of "Birmingham coppers" was that the enterprise was profitable, as Harris had predicted, and the risks minimal since in England counterfeiting copper coinage was pretty well ignored by authorities and treated only as a misdemeanor until 1742 when conviction drew a two year prison sentence. The falsification of gold or silver, however, had always been a felony punishable by death. This obvious inequity within the legal system for counterfeiting precious versus base metals identified the prejudicial attitude of the wealthy, ruling elite toward the poorer working classes who would stand to suffer more economic damage from illegal, lightweight coppers. It was not unusual for common laborers to receive their wages in counterfeit coppers which merchants might only accept at a discount, if at all (6).

In the colonies, the laws against counterfeiting were inconsistent, with punishments varying from the pillory to the gallows. As the eighteenth

1. Craig, London Mint, 253.
2. Newman, Colonial Virginia, 33.
3. Peck, British Museum, 206; Newman, "Bungtown Halfpence", 159.
4. Newman, "Bungtown Halfpence", 168.
5. Scott, Colonial New York, Chapter IX, "The Counterfeit British Halfpence (1753-1754)", 102-109; Newman, "Bungtown Halfpence", 144.
6. Barnard, "Forgery of English Copper Money", 342-346.

century progressed, more severe sentences were pronounced not only for the falsification of coins but for the alteration and printing of paper money (1).

A loophole existed in English statutes. There was only restriction against the manufacture of coppers which "resembled" regal halfpence and did not copy them exactly (2). A thriving business developed in the production of "evasive halfpence" which had only a similarity to the real coins with legends of a non-regal nature such as GEORGIUS III RUX, GOERGIUV III PAX, and on the reverse, BRITAIN RULES, BONNY GIRL and BRITISH TARS. While these coins were not counterfeits under a legal definition, they were foisted upon the poor and illiterate and inflicted as much economic damage on these classes had they been outlawed. Birmingham was the business center for this activity of "evasive" money as it was also for counterfeits (3). Substantial profits were made by the manufacturers and "smashers" (utterers or passers) of these "evasive" issues which were produced in great numbers and circulated in areas where royal coppers were in short supply. Atkins (4) catalogued some 491 different varieties of "evasives" with many more recently discovered.

Crosby listed several "evasive halfpence" in his book which he mistakenly identified with the American series as contemporary English counterfeits (5). However, there is no evidence that "evasive halfpence" ever circulated in America nor is there any report of such pieces being recovered in accumulations or hoards of the colonial period. There is indication that the "evasives" were introduced into America as collectors' items between 1877 and 1883 (6). Further research (7) has shown that the legends on these "evasive" pieces parodied historical events from 1776 through the French Revolution and into the early years of the Napoleonic Wars, and thus belong to an era substantially beyond our colonial period. No reliance can be placed on the dates or monarch appearing on the "evasives" as an indication of their time of manufacture. While these data support the thesis that "evasive" coppers are not a part of our American numismatic heritage, there is definite evidence to include the genuine and counterfeit farthings and halfpence from their beginnings with Charles II through the first coinage of George III as a part of the American Colonial series. Although the American plantations

1. Counterfeiting in the colonies is well described by Scott in his three monographs, Counterfeiting in Colonial New York, Counterfeiting in Colonial Pennsylvania, and Counterfeiting in Colonial Connecticut, Numismatic Notes and Monographs #140 (New York, 1957), and by Glaser in Counterfeiting in America.
2. Peck, British Museum, 205-206; Barnard, "Forgery of English Copper Money", passim.
3. Ruding, Annals of Coinage, Vol. II, 80; Peck, British Museum, 206-207.
4. James Atkins, The Tradesman's Tokens of the Eighteenth Century, "Imitation of the Royal Coinage" (London, 1892), 385-395.
5. Early Coins, 172-173.
6. Newman, "Bungtown Halfpence", 151-153; Breen, "Coin Hoards", 23.
7. J.D.A. Thompson, "Evasions", Seaby's Coin and Medal Bulletin (London, June, 1949), 275-276; Barnard, "Forgery of English Copper Money", 356.

relied on foreign silver and gold, except English, the minor coinage came from the mother country, both the legal and false. The study of copper becomes of greater importance during the Confederation period, yet to be related.

At this point, our survey of colonial coinage approaches the brink of the American Revolution, a conflict which arose as the Plantations looked for more economic self-determination while an equally resolute mother country strove to protect her markets and raw material supply; it became a losing battle for England to maintain her possessions in America, both prosperous but dependent. Paper currency, a necessity to increase the visible money supply, had, generally speaking, achieved moderate stability despite Parliamentary restrictions which were regarded as more protective of British investments than nurturing of colonial commerce (1). Foreign silver, as recorded in the Proclamation of 1704, and gold coins were the primary hard money of the period in addition to the coppers just described which acted as small change. Commodity moneys were gradually being phased out of former positions of importance as paper money gained in popularity. Bills of exchange continued to be important instruments of foreign credit. This was the visible money supply as indicated by Ernst (2) which played an important and vital role in daily commerce. A total picture of colonial economics requires an evaluation of other factors such as capital flow, and domestic and foreign debt and credit. For whatever reasons, political, economic, or social, the Revolution was here. This summary, although incomplete and abbreviated, has attempted to present the pertinent monetary and numismatic history leading up to this revolt as well as lay the background for further events to be related during the Confederation period.

1. Ernst, Money and Politics, 359-360.
2. Ernst, Money and Politics, 355-356.

THE NEW CONSTELLATION

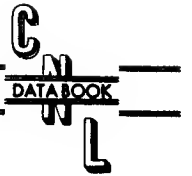
Conflict became inevitable and at last occurred on April 19, 1775 at the Battles of Lexington and Concord. "... the great war for independence was not simply a conflict between the imperial government and a group of revolting colonies, but almost as truly a civil war between two American parties, one standing for an old allegiance and an old patriotism, the other looking forward hopefully to the establishment of a new order." (1) Kenneth Roberts' classic, Oliver Wiswell, is a fascinating account of the civil strife between the so-called patriots and the old order Tories, who in many instances were economically distinct groups. It was estimated that between one-third to one-half of the American colonists remained loyal to the Crown with at least 20,000 serving in the English forces (2).

The Continental Congress, which first assembled in August 1774, was meeting in the summer of 1776. Thomas Jefferson was appointed to prepare the Declaration of Independence which was signed on July 4th, only two days after its completion. To have declared independence was easy, but to decide on the form of self government is another matter.

Another committee selected by that Second Continental Congress in July of 1776 was assigned the task of composing a constitution by which these new states would launch themselves as a free nation. These Articles of Confederation were the subject of heated debate for sixteen months before approval by Congress. Those six colonies with fixed boundaries were unwilling to accept this document until some provision was made for those western lands claimed by the other seven, which by compromise became part of the national domain. The new constitution was forwarded to the state legislatures for ratification and did not come into effect until March 1, 1781, when Maryland became the final state to mark its approval (3).

The Articles of Confederation were a very weak instrument providing only for a "firm league of friendship" between the several states and did not establish a single nation. "The thirteen states approved a document that in effect gave no more power to Congress than the colonies had been willing to give to Parliament." (4) The states maintained those powers not explicitly given the Continental Congress. Only the state legislatures could levy

1. Greene, Foundations, 456-457.
2. J.W. Schuckers, A Brief Account of the Finances and Paper Money of the Revolutionary War (Philadelphia, 1874, reprinted New York, 1978), 103, hereafter cited Finances and Paper Money.
3. David Hawke, The Colonial Experience (Indianapolis, 1966), 647-651; Merrill Jensen, The New Nation. A History of the United States During the Confederation, 1781-1789 (New York, 1950), 8-10, 18-27.
4. Hawke, The Colonial Experience, 648.



taxes and when the national government required funds, requests for money would be forwarded to the states according a specific formula. In the area of finance, Congress was entitled to coin, borrow, and appropriate money as well as issue bills of credit. Exercising parallel authority, the states were also permitted to establish mints and print paper money.

To meet wartime expenses, Congress authorized \$2,000,000 in paper currency soon after the Battle of Lexington and Concord and by the end of 1779, a total of \$241,500,000 had been issued. This Continental currency was fiat money, backed only by the credit of Congress, but necessary since the states were reluctant to exercise their prerogative under the Articles of Confederation and levy taxes to assist with the war effort. The state legislatures, however, were not at all timid about printing their own bills of credit as an alternative to taxation and so an additional \$200,000,000 in state currencies was placed in circulation through 1779 (1). Although this paper money was secured only by the good faith of the issuing authority, this currency maintained its value during the first year or two of the Revolution because the public had had good experience and faith in the prewar colonial paper money (2). This confidence was soon shattered by wartime inflation and all Revolutionary paper money depreciated rapidly such that by 1781 it was essentially worthless, giving rise to the aphorism, "not worth a Continental." Tables (3) published the schedule of depreciation of Continental currency "to provide for the more equitable Payment of Debts." One hundred dollars in paper fell from a par of \$100 in specie on September 1, 1777 to \$ 60/90 (4) or \$ 0.55 1/2 by May 1, 1781. This depreciation was accelerated by wholesale counterfeiting of paper currency which even resulted in the recall of entire issues because of the great number of false bills (5). Many of these counterfeits were produced in Europe -- Germany, Holland, and Ireland. England blatantly waged an economic war by printing large numbers of counterfeit American notes which were smuggled into the country to discredit an already failing currency (6).

Schuckers estimated the cost of the Revolution from \$170,000,000 to \$180,000,000 of which no more than \$30,000,000 had been paid by 1784 (7). A

1. J. Earl Massey, America's Money (New York, 1968), 57; Hawke, The Colonial Experience, 608-609; Bullock, Essays, 64-65. In 1776, Congress discarded the English money of account denominations of £, s., and d. in favor of dollars.
2. Ferguson, "Currency Finance", 167.
3. New Jersey Gazette, Vol. V, #211, Wed., Jan. 9, 1782. See also Felt, Mass. Currency, 196.
4. The notation \$ 60/90 will be described subsequently.
5. Leo Gorelkin, "Currency and Its Counterfeiting in Colonial America", The Numismatist, Vol. 97, #11, Nov. 1984, 2273-2285.
6. Felt, Mass. Currency, 174; Willis A. Overholser, A Short Review and Analysis of the History of Money in The United States (Libertyville, Ill., 1936), 31-32; Glaser, Counterfeiting in America, 39.
7. Schuckers, Finances and Paper Money, 109; John Fiske, The Critical Period of American History 1783 to 1789 (Boston, 1888), 166.

recent study by Anderson describes other fiscal paper of the period (1). These certificates of public debt issued by the states and Continental Congress, in addition to paper money, were another means by which the War was financed. Whereas bills of credit were intended as a circulating paper currency and payable to the bearer, these debt certificates were issued to specified individuals, were not intended for general circulation, were usually interest bearing, were not legal tender, but generally were receivable for taxes.

Following the Declaration of Independence, another element of confusion was added to the monetary system. The Continental dollar became the money of account for the Federal government and was made equivalent to the Spanish milled dollar. Since the Spanish standard did not have a uniform value among the states' moneys of account, neither could the Continental dollar (2). Because the Continental Congress had a permanent base in Philadelphia, the finances of the Revolution were typically expressed in Pennsylvania funds where the Spanish milled dollar (and now the Continental dollar) passed at 7s. 6d., or 90 d., Pennsylvania currency. Fractions of the Continental dollar were, therefore, expressed on the basis of 90 parts to the dollar. This unit of 90 supported the issuance of fractional paper money in denominations of 1/6, 1/3, 1/2, and 2/3 of a Spanish milled dollar which were equivalent to 15 d., 30 d., 45 d., and 60 d. Pennsylvania money of account, respectively (3). An example of this notational system is the expression that French gold coin was valued at \$16 68/90 per ounce, etc. In other states, the fractional basis for the Continental dollar would be similarly determined according to the current value of the Spanish milled dollar in the local money of account; New York and North Carolina calculated fractional dollar values in ninety-sixths, South Carolina and Georgia in fifty-sixths, the New England states and Virginia in seventy-seconds, and all others in ninetieths. Certainly, independence brought no improvements in terms of a manageable money system which was further complicated by the authority given to each state under the Articles of Confederation to issue its own currency, even though the decimal basis of 100 was adopted by Congress on July 6, 1785.

The war was over on October 19, 1781 when Cornwallis surrendered to Washington at Yorktown, Virginia. The question was whether these "thirteen commonwealths bound in a league of friendship" would emerge as one nation or thirteen. A preliminary peace treaty was signed on January 20, 1783 in Paris. Provisions of this treaty dealt with boundaries, fishing rights, and the more difficult issues of confiscated Tory holdings and the satisfaction of private debts incurred with England prior to the hostilities. Congress claimed it had no jurisdiction over the Loyalist properties and this issue would have to be settled at the state level. The treaty confirmed that the private debts were still binding and should be discharged at full value

1. William G. Anderson, The Price of Liberty, The Public Debt of the American Revolution (Charlottesville, 1983), 67-69, passim.

2. Schilke and Solomon, America's Foreign Coins, 12-17.

3. Williamson, "Virginia's Early Money of Account", 936.

although the states did not enforce this arrangement (1).

The war debt became an overwhelming issue. Congress was saddled with \$200,000,000 in bills of credit. Since only the states could levy taxes, Congress was at their mercy for funds to retire this Continental currency and the state legislatures showed no enthusiasm to raise money for this purpose. Large accounts were still outstanding for war supplies and food requisitioned from civilian merchants; the armed forces had gone unpaid. In 1776, at a time when the American cause looked bleakest, the military officers had demanded from Congress half pay for life after the war was over, and common soldiers were granted an \$80 bounty if they agreed to serve until the peace (2). Now, in 1781, the hostilities were over and the chief legacy from the war was hard-won freedom, a large war debt, unpaid and disquieted troops, and much worthless paper money.

It was evident that the Articles of Confederation were powerless to cope with such a situation. Congress needed to raise money independently from the several state legislatures. Leaders of the day recognized the need for a strong central government to contend with this economic crisis. In 1780, even before the war was over, when the army had become so desperate and discontented, it was proposed in Congress that General Washington be given dictatorial powers to deal with the dilemma (3). While one historian suggested that in the early 1780's the United States was on the brink of anarchy (4), others point out that the national responsibility and concern for the war debt was the "cement" which was holding the Union together (5).

Immediately following the war, hard money became plentiful from the specie which had been spent in the occupied territories by the now departed foreign troops (6). It has been calculated that the French armies placed about 35,000,000 livres (about £ 1,500,000) into colonial circulation while English forces, exclusive of the Royal Navy, stationed in the colonies were paid in excess of £ 10,000,000. These enormous sums of hard money caused an unprecedented, yet short-lived, prosperity in the post war era. More wealth entered circulation from confiscated Loyalist holdings and from proceeds recovered from privateering against English shipping. This abundance was only temporary since the hard currency was soon exported to England and Europe in exchange for manufactured goods and luxuries which had been in short supply during the Revolution. A serious post-war depression

1. Fiske, Critical Period, 28-33, 131, 154-155.
2. Jensen, The New Nation, 31-32, 37-43, 72.
3. Jensen, The New Nation, 46-47.
4. Fiske, Critical Period, 134-186.
5. Jensen, The New Nation, 73.
6. Louis Magazin, Economic Depression in Maryland and Virginia 1783-1787 (Ph.D. dissertation, Georgetown University, 1967), 22-24.

was at hand (1). Early in 1782, the United States Treasury contained not a single dollar, and only from loans through the Bank of North America, engineered by the financial genius of the Revolution, Robert Morris, was a total economic disaster averted (2).

Between 1784 and 1786, a £5,000,000 trade deficit with Great Britain shattered all hope for a stabilized currency, caused bankruptcies, depressed prices, and deepened the commercial depression (3). Merchandise from Europe glutted the American market since there was no available hard money. Credit was overextended. Farm prices had held until 1785 at which time they gradually began falling (4). The absence of circulating medium revised the practice of barter, whiskey in North Carolina, and tobacco in Virginia. The editor of the Worcester, Massachusetts, Spy advertised that he would receive subscriptions in salt pork (5). The American economy, while seriously affected, was not at a complete standstill as exports gradually increased through 1788 (6).

Debtors were particularly hurt by the lack of available circulating currency with which to meet obligations. State legislatures became battle grounds as the demand for cheap money swept the country. By 1786, seven states had resorted to "rag money," a currency which did not enjoy the stability of the colonial bills of credit (7). A particularly desperate situation existed in Rhode Island where a larger percentage of citizens was in debt. The debtors and farmers favored paper money because they had nothing, whereas the commercial interests were opposed since they "knew the difference between hard money and promissory notes of a bankrupt government." (8) A Rhode Island dollar which passed at full value in May 1786 had depreciated to sixteen cents by November even though secured by real estate (9). Commerce essentially came to a standstill when the pro-paper

1. Jensen, The New Nation, 185-193, 303. See also Maganzin, Economic Depression in Maryland and Virginia 1783-1787, passim, and John H. Flannagan, Jr., Trying Times: Economic Depression in New Hampshire 1781-1789, (Ph. D. dissertation, Georgetown University, 1972), 10-15. hereafter cited, Trying Times. McCusker and Menard, Economy, passim. Maganzin describes the depression in Maryland and Virginia even as it affected George Washington, a very wealthy man of the period. Flannagan takes issue with these historians who minimize this depression a "temporary" or insignificant as he documents commercial and economic collapse in New Hampshire.
2. Fiske, Critical Period, 167; Hawke, The Colonial Experience, 609.
3. Hawke, The Colonial Experience, 662
4. Robert A. East, Business Enterprise in the American Revolutionary Era (New York, 1938), 239-262. hereafter cited Business Enterprise.
5. Fiske, Critical Period, 165; Jensen, The New Nation, 192.
6. East, Business Enterprise, 248.
7. Bullock, Essays, 73. The states were Rhode Island, New York, New Jersey, Pennsylvania, North Carolina, South Carolina and Georgia.
8. Fiske, Critical Period, quote 174, 176.
9. Flannagan, Trying Times, 162.

Rhode Island legislature decreed that their currency must be received at full value, a condition which merchants refused to honor (1).

Typical of the paper money controversy was New Hampshire, where in 1786, paper currency issued by a land bank was advocated to alleviate the money shortage and provide means for retiring public and private debts. Some critics of the proposal "were opposed to a paper currency backed by land because their debts to English merchants had to be paid in specie and consequently little use could be made of forfeited land." (2) The New Hampshire legislature resisted the paper money plan, perhaps apprehensive because of the riotous behavior of some paper money supporters who demonstrated violently in September 1786 in Exeter, New Hampshire, and "raised a cry for paper-money, and equal distribution of property, and a release from debts." (3) Riots also occurred in neighboring Vermont at Windsor and Rutland (4).

The Massachusetts legislature also withstood the excitation for paper money despite the fact that there was an average debt of fifty dollars per person, considering private debts, the war debt, back pay for soldiers, and the current expense for running the government. The situation was further compounded by the requirement that taxes be paid in hard money, which particularly injured the farmers who protested the fact that they fought in the Revolution, were either unpaid or paid in valueless money, and now were forced to produce hard currency for taxes or face foreclosure or debtors' prison. Their resistance to authority led to a confrontation with the state militia in an encounter called "Shay's Rebellion." (5)

The Revolutionary War had hardly started before problems with the circulation of counterfeit coppers were brought to public attention. New York newspapers alluded to the potential devaluation of copper and the introduction of a Continental copper currency (6).

We hear it proposed that after 3 months the currency of all copper coin made of base metal or wanting in weight is to be totally suppressed and that the rest is past at the rate of 15 for an eighth part of a dollar. And if it shall appear that there is not a sufficiency for common use, that it will be all called in, and a new impression struck of Continental Copper coin, of a larger size, twelve of which is to pass for an eighth of a dollar, after which no other coppers are to pass current.

1. Fiske, Critical Period, 173-177.
2. Flannagan, Trying Times, 160, 162, 163, 174, 298-315, quote from 163.
3. Flannagan, Trying Times, 177, 312.
4. Fiske, Critical Period, 183.
5. Fiske, Critical Period, 177-183; Hawke, The Colonial Experience, 667.
6. New-York Journal or, the General Advertiser, #1747, June 27, 1776; New York Gazette, July 1, 1776.

Since a Spanish milled dollar or Continental dollar contained 96 d. in New York, an eighth part was a New York shilling, money of account. The rate for coppers had been fourteen to the shilling and the increase to fifteen had been suggested. Failing an adequate supply of legal coppers after "suppression" of the counterfeits, the newspaper account appears to have described the Continental copper coinage for which patterns dated 1776 are in existence. This Continental coinage had been authorized by the Continental Congress as early as February 17, 1776 and the proposal underwent subsequent modifications (1). The trial pieces in brass and copper were probably patterns for the copper coins of the series, which according to the article cited, were to pass at twelve to the shilling in New York (2). It is likewise believed that the Continental dollar in silver, for which a unique pattern exists (3), was to pass at twelve shillings each. The more numerous pewter Continental dollar patterns may have been prepared to provide a wider distribution and publicity for this coinage and to stimulate Congressional interest in this enterprise.

Significant problems existed as well with hard currency during the Confederation period. While paper money was subjected to devaluation and counterfeiting, hard coin currency itself could fall victim to tampering, debasement, and devaluation. Such mutilated and debased coins also tended to drive sound, full-valued coins out of circulation, making and unclipped silver and gold pieces rarities.

During the period of the Confederation the chaotic state of the currency was a serious obstacle to trade, and it offered endless opportunities for fraud and extortion. Clipping and counterfeiting were carried to such lengths that every moderately cautious person, in taking payment in hard cash, felt it necessary to keep a small pair of scales beside him and carefully weigh each coin after narrowly scrutinizing its stamp and deciphering its legend (4).

Clipping of coins was not limited to the private sector. In 1782, when the United States government had received a quantity of French guineas as part of a loan, the coins were clipped by treasury officials before being placed into circulation with the rationalization that if the government did not clip them, the first people who received the intact coin would certainly

1. Garrett Collection Sales #3, 109-111; Bowers, United States Coinage, 159-160; Taxay, Comprehensive Catalogue, 197, 201-202.
2. Don Taxay, The U. S. Mint and Coinage (New York, 1966), 3-10. Don Taxay, "Thomas Jefferson and the Founding of the Mint", Chapter 13 in Newman and Doty, Studies on Money, 209.
3. Garrett Collection Sales, lot 1491. This lightly worn specimen at 375 grains would only pass for 86.2 d. at 916.6 fine or 87 d. at sterling fineness of 925, New York money, and not for twelve shillings, or \$1.50 Continental money.
4. Fiske, Critical Period, 166.

do so, so any derived profit should accrue to the public benefit (1).

Following the war, lightweight counterfeit English halfpence again flowed into America with large numbers arriving with every ship from England. A 1781 proclamation from the Pennsylvania legislature described the effect of such counterfeits was to raise prices, cause "injury to the community in general: and the poor in particular" and "introduce new confusion in the currency of the country." (2)

This was the troubled scene of the 1780's: a severe depression with struggling commerce, a practically worthless paper money, a shortage of hard money, counterfeit and clipped coins, and a young nation staggering under a burdensome war debt. Many of these problems were a legacy from the colonial period already described. Fiske (3) provides an excellent insight into the hard money situation of the Confederation.

English, French, Spanish, and German coins of various and uncertain value, passed from hand to hand. Besides the ninepences and fourpence-ha'-pennies there were bits, and half bits, pistareens, picayunes, and fips. Of gold pieces there were johannes, or joe, the dubloon (doubloon), the moidore, and pistole, with English and French guineas, Carolins, ducats, and chequins (sequins). Of copper there were English pence and half-pence and French sou: and pennies were issued at local mints in Vermont, Massachusetts, Connecticut, New Jersey, and Pennsylvania.

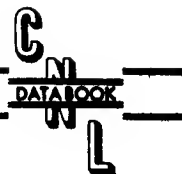
It was soon apparent that the Articles of Confederation were ill-equipped to meet the problems and challenges of the new nation. The final solution for these dilemmas was the establishment of the Constitution of 1787, a story which will be continued in Chapter Nine.

1. Allen Nevins, The American States During and After the Revolution, 1775 to 1789 (New York, 1924), 569.

2. Crosby, Early Coins, 171-174, quote 172. The loss to commerce in Pennsylvania by this "vile coin" was estimated at \$30,000 annually following the war.

3. Fiske, Critical Period, 165. Fiske is in error about copper English pence since these would not appear until the second coinage of George III in 1797. The term local "pennies" is also a misnomer in reference to the state coppers, especially from Pennsylvania where counterfeit copper were erroneously attributed (see Newman, "Bungtown Halfpence", 149-154). Of the other coins described here, the "ninepence" and "fourpence-ha'-pennies" refer to the Spanish real and half-real when the piece-of-eight passed at 72 d. (See Appendix III). A "fip" or fivepenny bit is another accounting for the half-real. Hence, the medio, half-real, half bit, picayune, fip, fippenny, fippence, and fourpence ha'-penny, were all terms for the same money. The Carolin, an 18th century German gold coin of 770 fineness and 149 grains, was named after Prince Charles Albert of Bavaria (Solomon, "Foreign Specie Coins," 38, and Webster's Dictionary, Unabridged). The "sou" was the smallest French copper coin. All other denominations are defined in Tables III, IV and V.

From a numismatic perspective we must pause and describe some very significant events which occurred from 1785 to 1789. While the country was still in the grips of a severe post-war depression and hard money shortage, the circulating copper currency, the money of the poor, was also in motley disarray and chaos. The prevalent copper money of the period, English halfpence and farthings, was diluted with base and lightweight counterfeits. The legal coppers at best were themselves a token coinage passing at about double their intrinsic value. The introduction of lightweight and false coppers undermined public confidence in this medium. In an attempt to rid commerce of these illegal coppers which eroded the economy and caused financial damage especially to the poor who could afford it least, various states authorized projects under the authority of the Articles of Confederation to mint domestic copper coinages which would provide a stable currency. The next chapter, "Coinage of the Confederation Period", describes the details of this experience.



COINAGE OF THE CONFEDERATION PERIOD

Connecticut Coppers

The scarcity of small change and the abundance of lightweight counterfeit coppers, which caused financial damage to the poorer and working classes in particular, was a continuing concern. The first action to introduce a legitimate, full weight, copper currency designed to suppress circulation and acceptance of bogus English halfpence was launched when the business association of Samuel Bishop, James Hillhouse, John Goodrich, and Joseph Hopkins petitioned the Connecticut legislature on October 18, 1785 (1) for a franchise to mint coppers for the state under the Articles of Confederation, which authorized both federal and state mints. Two days later, the legislature approved this proposal allowing the partnership, the Company for Coining Coppers, to mint coppers until June 1, 1787, stipulating that the coins weigh 144 grains each, or 46 to the pound, that a five percent royalty be paid to the State Treasury, and that the coppers were not legal tender but for use in making "even Change, for any sum not exceeding three Shillings." (2)

Besides this legally sanctioned organization, at least six or possibly seven other mints participated in manufacturing Connecticut coppers over a span of four or five years, although in many instances these different "mints" were just a business reorganization or realignment of shareholders (3). To date, 346 different die types or combinations have been identified. The classification published by Henry C. Miller in 1920 and subsequently enlarged by others is the accepted system (4). This scheme does have its inadequacies since it relies on the punctuation and devices in the legends rather than on the more obvious bust styles which would better identify the coin as to mint and engraver. The basic reference for material cited in the following synopsis is from Walter Breen, "Legal and Illegal Connecticut Mints, 1785-1789" (5) and additional resources will be cited, including original contributions from The Colonial Newsletter (6).

1. Crosby, Early Coins, 207-210.
2. Crosby, Early Coins, 210.
3. See CNL, 459, for a brief summary of the six known Connecticut mints.
4. The State Coinage of Connecticut (New York). An interesting biographical sketch, "Henry Clay Miller" by Edward R. Barnsley, appears in CNL, 243-247. Miller's list has been updated also by Barnsley with the addition of newly discovered die varieties and combinations ("Miller's Connecticut Listings Updated", CNL, 76-108.)
5. Newman and Doty, Studies on Money, Chapter 9, hereafter cited "Connecticut Mints".
6. CNL, 596-597, suggests that the bibliography necessary for an in depth knowledge of this complex colonial coinage of Connecticut includes [1] the Miller text, cited; [2] Breen's chapter, cited; [3] The Pine Tree Auction

All Connecticut coppers have the same basic motif with an obverse bust either draped in a toga or clad in mail, facing left or right in the pose of George II or George III, respectively, and the abbreviated legends, AUCTORI CONNEC, "By the Authority of the State of Connecticut," or some variation thereof. The reverse design is a Britannia-like figure with the marginal inscription, INDE ET LIB, "Independence and Liberty," rarely ET LIB INDE, or a modified abbreviation of INDE as IND. This new coinage was purposely modeled after the already familiar English halfpence on the assumption that the population would be more inclined to accept in commerce a coin similar to those well known to them for years.

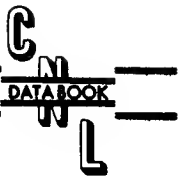
Within the 346 different die combinations, there are about 25 distinct bust styles, many of which are readily identifiable as to engraver and mint. While attribution is relatively certain during 1785, 1786, and much of 1787, there is much speculation for the remaining year in regard to issuing mint. During the first year, the engraver and diesinker for those pieces from the Company for Coining Coppers was Abel Buell who produced the 1785 bust right coppers by using a common obverse head puncheon and a common reverse seated figure puncheon to impress the dies. The impressions were then strengthened and the legends added by hand engraving. A few of the 1785 mailed bust right coins vary from Buell's style, notably the "African Heads" and those related by common letter punches, suggesting either a different engraver with his own set of tools, or the possibility of a second mint entirely.

In 1786, Buell, described by his biographer as "an uncommonly ingenious mechanic," began to make dies by impressing them from a common hub, employing a technology fully fifty years before its time (1). By this procedure, the mailed bust left coins dated 1785 and 1786 were manufactured. It is speculated that Buell altered the original bust right design to face left to distinguish his coins from illegal 1786 bust right "counterfeit" Connecticut coppers which had begun to appear from the Rahway, New Jersey, mint of Goadsby and Cox, pressed from dies engraved by James F. Atlee (vide infra). The Rahway mint had been established under the authority of the New Jersey Legislature to mint coppers for that state with a royalty payable to the treasury. By diverting their efforts into Connecticut coppers, a royalty was owed to neither state, specifications as to weight were not binding, and profit margins could be increased.

Although first inspection of the "Hercules Head" of 1786 and 1787, also minted by the Company for Coining Coppers, suggests a totally different

Company, Early American Coppers Sale Catalogue (Albertson, N.Y., Feb. 15, 1975), hereafter cited E.A.C., which contains comprehensive photographic plates and descriptions of 315 varieties; [4] the following issues of CNL, #11, 15, 22, 33, 36, 39, 41, 42, and recommended by this author, #34.
1. James C. Spilman, "Abel Buell - Our American Genius", CNL, 352-355, 424-434.

2. See the excellent series by James C. Spilman, "An Overview of Early American Coinage Technology", CNL #62-65, for a comprehensive review of the actual processes for minting these early coppers.



style; it is actually a standard mail bust left design of 1785 and 1786 which had been significantly recut to produce the scowling face, thick neck and rectangular chin of this familiar piece (1).

A new draped bust left copper appeared in 1786 from dies also prepared by Buell. Breen speculates that this change in design may indicate a change in business arrangements for the Company for Coining Coppers when their equipment was leased for seven weeks beginning September 10, 1786 to Mark Leavenworth, Isaac Baldwin and William Leavenworth (2). This was the first use of the draped bust left motif; those dated 1786 are relatively scarce, whereas the later 1787 draped left issues are by far the most common of all Connecticut coppers. Following introduction of the draped bust left design by Leavenworth et al., this type was then minted by the Company for Coining Coppers for the remainder of 1786 and until June 1, 1787 when their operation ceased since their legal franchise given by the legislature expired. The business then passed into the hands of Jarvis and Company, which included some of the previous partners, who reorganized the organization to mint Fugio coppers under a Federal contract. This new enterprise was undaunted and continued to mint Connecticut coppers from 1787 draped bust left dies even though they lacked the authority from the state to do so. Unencumbered by any legal concerns, more 1787 Connecticut coppers were emitted by far from Jarvis and Company without a franchise than came from the authorized Company for Coining Coppers. Of further interest is that the copper used by Jarvis for his Connecticut coins was fraudulently diverted from Federal stocks intended for the Fugio series, which will be described later.

Individual characteristics of this abundant 1787 draped bust left coinage have been described by Breen which help identify the mint of origin, whether the legal Company for Coining Coppers prior to June 1, 1787 or the opportunistic Jarvis and Company which operated until the Fall of 1788. Breen (3) has further calculated the total output of the Company for Coining Coppers at 1,407,000 for the years 1785 to 1787, while Jarvis and Company produced about 3,500,000 Connecticut coppers from 1787 to 1788. With about five million coins thus accounted for, a conservative estimate of Connecticut coppers minted from all sources would exceed seven million. While there are 346 die combinations, many of these dies obviously fractured very early in use since few survivors exist today.

At least three other illegal mints produced Connecticut coppers bearing the date 1787, although the date inscribed carries no guarantee as to the actual year of manufacture. The location of the first clandestine operation remains undiscovered and is the source of the obviously contemporary counterfeit piece nicknamed the "Bull Head," (4) "Muttonhead," or "Bradford Head" after a supposed likeness to the second governor of the Plymouth

1. Miller, Connecticut, 15; Edward R. Barnsley, "Nicknamed Connecticuts", CNL, 390.

2. See also CNL, 591.

3. "Connecticut Mints", 125, 127; E.A.C., 25.

4. Barnsley, "Nicknamed Connecticuts", CNL, 388-389, 392-394.

Colony, William Bradford. The "Muttonhead" has two die styles, one representing a significant reworking of the original bold legends resulting in weakened inscriptions.

In the same manner that the Rahway mint flooded commerce with spurious 1786 Connecticut coppers, the other legal New Jersey mint at Morristown, under Walter Mould, was the source of four other distinct varieties of 1787 coins. This group is punch-linked with Mould's New Jersey coppers, all demonstrating a characteristic horseshoe shaped "U". An interesting and common coin from this source is the so-called "Horned Bust" which demonstrates the gradual emergence of a die break in the left field in front of the obverse figure's armor. As this die flaw enlarges, it runs into the figure's mail so that subsequent impressions look like a horn emanating from the figure's chest (1).

The last illegal location responsible for 1787-dated Connecticut coppers was the mint of Captain Thomas Machin, which is a fascinating story in itself and will be recounted later in more detail. This enterprise obtained the services of the experienced engraver and diesinker, James F. Atlee after June 7, 1787 when he left the employ of Goadsby and Cox at Rahway, New Jersey. The Connecticut coppers from this mint dated 1787 have obverse busts very typical of Atlee's style who also engraved the legal Vermont bust right coppers, and the imitation English halfpence.

Machin's Mill was particularly active in minting Connecticut coppers dated 1788 despite the fact that no legal authority existed for manufacturing coins of that date. It is speculated that this operation bought out the existing equipment of the Morristown mint, Jarvis and Company, and the remaining dies by Abel Buell, i.e. the mailed bust left triple leaves hubs. The purchase of all this discarded equipment by Machin is the most logical explanation for the existence of so many muled 1788 dated coins made from dies from so many different sources.

The greatest mystery surrounds the provenance of the mailed bust left triple leaves design of 1787 and 1788. The hubs from which these dies were prepared were the work of Abel Buell who apparently did not pass them along to Jarvis and Company when the Company for Coining Coppers dissolved, with Buell leaving for England in early 1787. It is supposed that Abel Buell gave these triple leaves hubs to his son, Benjamin, who minted these varieties from an unknown location early in 1789, despite the dates 1787 and 1788. Then Benjamin seemingly relinquished his residual gear, including the triple leaves hubs, to Captain Machin who muled many of these dies with others by Atlee to produce several die varieties of the 1788-dated Connecticut coppers.

The practice of overstriking new coins on existing coppers occurred in the 1788 Connecticut series, when Constellation Nova coppers and rarely counterfeit Massachusetts cents, were used as host coins for Connecticut

1. Barnsley, "Nicknamed Connecticuts", CNL, 385.

Plate X

The Obverse bust styles on Connecticut coppers of 1785 to 1788, with an attempt to assign the mint of origin. The classification in this plate depends only on the "naked eye" appearance of the various busts with no concern as to the legends or punctuation on which Miller based his system. Spilman presents a very complete study of the interrelationship of the various Connecticut dies in "An Experimental DIE ANALYSIS CHART for the Connecticut Coppers", CNL 572-578, 594-602, 630-634. The reverse design is similar on all issues but with many individual variations; inscriptions may vary from INDE ET LIB, IND ET LIB, and ET LIB INDE. Figure 5 shows a common, typical reverse.

Figure 1: A typical 1785 Standard Bust, a style for which much individual variation exists. These were all made at the Company for Coining Coppers (C.C.C.) of New Haven. Illustrated is Miller 4.3-D, 134.9 grains.



Figure 2: The Mailed Bust Left of 1785 and 1786 from C.C.C. Those of 1785 are rare. These dies closely resemble the 1786 Vermont Ryder-Richardson 10, 11, and 15 (Douglas, "James Jarvis", 581; see Plate XII, figure 3). Illustrated is 1786 Miller 5.4-0.1, 142.0 grains.



Figure 3: 1785 African Head, probably from C.C.C. Other styles exist; illustrated is Miller 4.1-F.4, 131.3 grains.



Figure 4: The Hercules Head of 1786 and 1787 from a recut Mailed Bust Left die, from C.C.C. Illustrated is 1786 Miller 5.3-N, 142.9 grains. When the same obverse die was used in a subsequent year in combination with a different reverse die, this occurrence is described as "biennial pairing" and is observed eleven times in the Connecticut series (see Edward R. Barnsley, "Connecticut Coppers", CNL, 206-212).



Figure 5: The Draped Bust Left, the most common Connecticut style, comprising over half of the entire series, showing both obverse and reverse. Those dated 1786 and those minted prior to June 1, 1787 came from C.C.C., while the more than 3,500,000 minted after that date came from Jarvis and Company. The stylistic differences which indicate the mint of origin are reviewed by Walter Breen. Those dated 1788 are probably products of Machin's Mill and are significantly lighter than those dated 1786 and 1787. Illustrated is 1787 Miller 37.11-ff.2, INDE ET-LIR, 161.0 grains.



This reverse has a typical "blundered legend" where LIR appears for LIB apparently because of an unavailable "B" letter punch and the substituted "R". Such letter substitution, presumably because of broken punches, is not without precedent since on 1697 William III halfpence an upside down "V" accommodated for a missing "A".



Figure 6: 1786 Small Round Head Right, Miller 2.1-A, from the Rahway, New Jersey, mint; dies by James F. Atlee. Illustrated specimen weighs 96.8 grains.



Figure 7: 1786 Larger Round Head Right with Double Chin, Miller 1-A, also from the Rahway mint. The double chin is from a die break. Illustrated specimen weighs 135.0 grains.



Figure 8: 1786 Very Large Head Right from the Rahway mint, engraved by James F. Atlee. It is speculated that the Vermont Ryder-Richardson-9 was copied from this piece (see Plate XII, figure 2). Illustrated is Miller 3-D.1, 131.8 grains.



Figure 9: 1787 Muttonhead or Bradford Head, a contemporary counterfeit from an unknown mint. The UPPER figure has the strong legend, while in the LOWER the inscription has been reworked and is weaker. Both illustrations are Miller 1.2-C, 117.3 and 145.4 grains, respectively.



Figure 10: 1787 Tallest Head, Miller 8-0, a Mailed Bust Left from dies extensively recut by hand by Abel Buell. Illustrated specimen is 141.8 grains.



Figure 11: 1787 and 1788 Triple Leaves Standard Mailed Bust Left Head engraved by Abel Buell, minted at uncertain locations, but probably by Benjamin Buell and at Machin's Mill. Illustrated 1788 Miller 10-C, 112.1 grains. This coin is struck over a Constellatio Nova 4-C. Ex Roper, lot 260 (Stack's, December 1983); ex Massachusetts Historical Society, lot 165 (Stack's, October 1970).



Figure 12: 1787 Medium Bust Left, Miller 1.3-L, from the Morristown mint with dies engraved by Walter Mould. Note the broad, horse shoe shaped "U". Illustrated specimen weighs 102.4 grains.



Figure 13: 1787 Horned Bust, Miller 4-L, from the Morristown mint from dies by Walter Mould with a reverse in common with the preceding coin. This issue may be found without a die break (LEFT), with the die break (RIGHT) "horn" on bust, in all stages of progression, and on either wide and narrow planchets. Illustrated specimens weigh 133.0 and 135.5 grains, respectively.

Figure 14: 1787 Laughing Head, Miller 6.1-M, also from the Morristown mint by Walter Mould. Illustrated specimen weighs 126.2 grains.



Figure 15: 1787 Simple Head, Miller 6.2-M, the fourth and last of the Morristown Connecticut coppers by Walter Mould. Illustrated specimen weighs 124.2 grains.



Figure 16: 1787 and 1788 Small Head Right engraved by James F. Atlee and minted at Machin's Mill. This same obverse was used in combination with a Vermont reverse (see Plate XII, figure 7). Illustrated specimen Miller 1787 1.1-A, 106.6 grains. Another example of "biennial paring."



Figure 17: 1787 Romanesque Large Head Right engraved by James F. Atlee and minted at Machin's Mill. Illustrated Miller 52-G.1, ex Massachusetts Historical Society, March 1973, 94.3 grains.

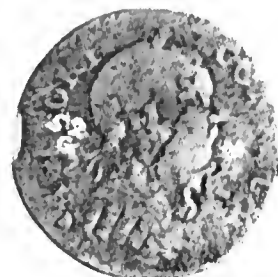


Figure 18: 1787 Large Head Left with Broad Shoulders, Miller 3-G.1, minted at Machin's Mill, dies by James F. Atlee. Illustrated specimen weighs 101.1 grains.



Figure 19: 1787 Childish Face Left, Miller 13-D, engraved by James F. Atlee and minted at Machin's Mill. Illustrated specimen weighs 102.9 grains.



Figure 20: 1788 Medium Head Right, Miller 2-D, from Machin's Mill, dies engraved by James F. Atlee. This reverse die is muled with an imitation Machin's Mill halfpence, Vlack 13-88 CT. Illustrated specimen weighs 119.4 grains.



Figure 21: 1788 Pouting Boyish Head Right, Miller 6-H, from Machin's Mill with dies engraved by James F. Atlee. Illustrated specimen weighs 117.3 grains.



Figure 22: 1788 Standard Mail Bust Right from Machin's Mill. These busts all have a familial resemblance and many are overstruck on 1785 Constellatio Nova coppers. Illustrated specimen Miller 3.1-B.1, 97.7 grains, struck over a 1785 Constellatio Nova 4-D.



Figure 23: 1788 Bust Left with Hair Bow, Miller 9-E. This specimen from Machin's Mill with dies by James F. Atlee is the only Bust Left with a distinct bow. The obverse figure is similar to the 1787 Childish Face Left. Illustrated specimen weighs 142.0 grains.



Figure 24: The excessively rare (two known) 1787 Medium Head Right, Miller 1.4-WW, also engraved by James F. Atlee and minted at Machin's Mills. The almost indistinguishable central effigy is probably the result of poor die work.



coppers, instead of using a new planchet. This was an economy measure whereby the minter avoided the cost of planchet preparation but could feed preexisting coins of the correct size into the presses where they received the new stamp. This was particularly advantageous when the host coins were lighter in weight and value than new coppers, since the profit margin derived from the manufacture of the new money could be substantially increased. The stratagem of overstriking a copper coin of higher commercial on a lighter, cheaper coin was not an original one in the colonies. Batty (1) described a 1773 counterfeit English halfpence struck over a genuine Irish halfpence as a host coin. The differential in exchange rates between England and Ireland (2) would have allowed an immediate 9.25% profit for the entrepreneur. This maneuver of overstriking coppers figures very prominently in the story of Confederation numismatics and will be discussed at length later.

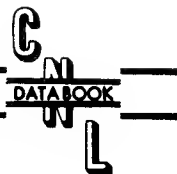
A perusal of the Connecticut series not only reveals an impressive number of bust styles but additionally what appears to be at first glance misspelled legends such as AUCIORI, AUCTOBI, AUCTOPI, CONNFC, CONNLC, FNDE, INDL, IIB, and LIR. These so-called blundered legends have been scrutinized by Edward R. Barnsley who presents convincing evidence that these "misspellings" are not orthographic errors committed by some untutored diesinker, but rather the substitution of similar letters when the proper letter punch required to complete the inscription was unavailable and presumably broken (3). "B" appears to be the most frequently lacking letter. The die maker would fashion missing letters out of resources at hand, such as developing an "E" from an "F" or a "B" from a "P". Barnsley concluded that some blunders may actually have been unfinished improvisations where for example the "L" was not hand finished into an "E" as in INDL and CONNLC. The one blunder which Barnsley postulates as a true error is FNDE for INDE, for which no attempted correction is evident. Other errors were corrected by overpunching, the most notable being the dates 1787 over 1877, and 1787 over 1788.

New Jersey Coppers

The year following the award of the Connecticut mint franchise, a similar proposal reached the New Jersey legislature. The preamble to this statute, which was passed on June 1, 1786, summarized the problem succinctly (4).

Whereas Copper Coin now current and passing in this State consists mostly of base Metal, and of copper so small and light as to be of very little real value, whereby the Citizens of the State are subject to manifest loss and inconvenience, and are liable to be greatly defrauded: for remedy whereof ...

1. Descriptive Catalogue, Vol. III, #3340, 945.
2. McCusker, Money and Exchange, 34.
3. Edward R. Barnsley, "The Bizarre Lettering of Connecticut Coppers", CNL, 356-367.
4. Crosby, Early Coins, 278.



The act empowered Walter Mould, Thomas Goadsby and Albion Cox to mint three million copper coins of 150 grains pure copper over the next two years. A 10% royalty was payable to the state for these coppers which were to pass at 15 to the New Jersey shilling (1). The motif selected for the New Jersey coppers depicts a horse's head facing right above a plow on the obverse, surrounded by the legend NOVA CAESAREA and the date below. The legend, NOVA CAESAREA, for New Jersey refers to the fact that the Island of Jersey in the English Channel, for which New Jersey was named, was once called Caesar's Island, the name Jersey being a corruption of the Latin (2). The reverse design has an American shield with the peripheral inscription E PLURIBUS UNUM, the first use of our national motto which later used on Federal coinage starting in 1796.

The New Jersey mint was established in a Rahway mill leased from Daniel Marsh with the rent guaranteed by Matthias Ogden, a Revolutionary War hero, acting as a bondsman. The business relationship was stormy and soon dissolved with Goadsby and Cox continuing the project at Rahway to mint two million coppers, while Mould set up independently at Morristown for his one-third portion of the franchise. The Rahway mint had a series of legal problems not the least of which when Cox was remanded to debtors' prison when sued for unpaid wages by Benjamin Dudley, a diesinker. The other engraver, James F. Atlee left this employment to join Captain Thomas Machin at Newburgh, New York, sometime prior to June 1787. In Cox's absence, Goadsby apparently removed the mint equipment from Rahway and continued independently, leaving Ogden as bondsman responsible for the unpaid rent for Marsh's mill. The dies engraved by Goadsby during this hiatus are the horse head left varieties. Cox obtained a writ of replevin for return of the machinery which eventually was placed in the custody of the bondsman, Matthias Ogden, who in 1788, relocated the equipment in Elizabethtown and continued production there in association with Gilbert Rindell. Despite this unsettled business environment, "Goadsby and Cox," first under the partnership, then by Goadsby alone while Cox was in prison, and lastly by Ogden and Rindell completed the franchise for two million coppers by July 3, 1788 (3). It is evident that Ogden illegally exceeded the franchise by producing more New Jersey coins, overstriking existing coins with leftover

1. The principle references used for New Jersey coinage are as follows: William T. Anton, Jr., "A Modern Survey of the Copper Coinage of the State of New Jersey", CNL, 487-513, hereafter cited "New Jersey"; The William Weimer and David Hirt Collections, Pine Tree Auction Company, March 5, 1976, 97-107; Everett T. Sipsey, "New Facts and Ideas on the State Coinages", CNL, 124-127; Damon G. Douglas, "The Original Mint of the New Jersey Coppers", CNL, 225-229; Edward Maris, A Historical Sketch of the Coins of New Jersey (1880, Quartermaster reprint, 1974); Crosby, Early Coins, 275-288; Walter H. Breen, (Assignment of New Jersey Mints) CNL, 255-256.
2. Harold A. Frey, Jr., "New Jersey cent legend steeped in history", Coin World (Wed. Dec. 19, 1979), 22.
3. Walter H. Breen, "Mintage Figures for the New Jersey Coinage", CNL, 296-297.

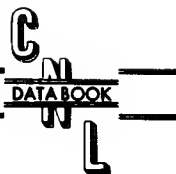
Rahway dies at Elizabethtown until June 1789. The motivation for the Rahway mill to increase their profit margin by manufacturing counterfeit Connecticut coppers is easy to understand considering the unstable financial position of the business.

Mould continued his work at Morristown and by August 1788 fulfilled his authorized allotment of one million coppers (1). The Morristown mint produced the large planchet New Jersey coppers, the finer dies engraved by Benjamin Dudley, while the coarser ones are attributed to Mould. The Maris 6-C copper is a mule with the crude obverse executed by Mould and the reverse by Thomas Wyon, the mint master of the Birmingham mint where Mould was a student (2). It is postulated that Mould brought this die with him when he emigrated. The 1788-dated Morristown coppers are by Mould and generally reflect inferior quality and workmanship. In the same manner as the Rahway mint, Mould also supplemented his income by manufacturing some Connecticut coppers dated 1787, which are easily identifiable as products of this mint and Mould's craftsmanship. Dudley, who was a more skilled engraver than Mould, eventually sued his employer for unpaid wages but the latter had fled to Ohio to escape Ogden who attempted to collect the still unsettled lease payment for Marsh's mill in Rahway. As to the fate of the other two original partners, Cox escaped from debtors' prison and fled to England, while Goadsby took refuge in Vermont.

Other New Jersey coppers of 1788 appear to be the work of John Bailey of New York City, the partner of Ephraim Brasher, who was well known for his famous Brasher gold doubloon. Bailey's coins have the characteristic "running horse" mint mark in the reverse legend (3). Of less certain origin is the contemporary counterfeit nicknamed the "Serpent Head" (Maris 54-k) which has been attributed to a Mr. Hatfield of Elizabethtown.

Considerable controversy attends the role of Machin's Mill in the manufacture of New Jersey coppers. It is known that Atlee left Rahway to join the Newburgh organization and it is supposed that Mould sold his remaining equipment to Machin prior to his hurried departure to Ohio. Because die punches used on New Jersey "Camel Heads" (Maris 56 to 58-n) are identical to those used on some 1788 Connecticut coppers from Machin's Mill, it has been assumed that the mentioned New Jersey coppers were made in Newburgh (4). The other explanation is that Atlee made the "camel head" dies for the Elizabethtown mint of Matthias Ogden (5). It is quite con-

1. Breen, "Mintage Figures for the New Jersey Coppers", CNL, 295-296.
2. Everett T. Sipsey, "Dies by Wyon", CNL, 154-156.
3. Walter H. Breen, "Brasher and Bailey: Pioneer New York Coiners, 1787-1792", in Harald Ingholt, editor, Centennial Publication of the American Numismatic Society (New York, 1958), 137-145.
4. These common letter punches for the "camel heads" and the 1788 Connecticuts were originally from the tools of Jarvis and Company which Machin acquired. See Walter H. Breen, (New Jersey Mints), CNL, 256.
5. Anton, "New Jersey", CNL, 499-501.



ceivable that Atlee, Bailey, and other engravers of the period could have traveled widely selling their services to various mints.

The standard reference for the attribution of New Jersey coppers was published by Dr. Edward Maris in 1880. Considering the number of engravers who produced New Jersey dies, there is a surprising level of consistency among the coins except for the head left obverses by Goadsby and the two rare obverse patterns by Wyon, Maris-7 and 8. Maris described the more complex plow on Goadsby's coppers by drawing attention to the detail of the coulter which "after widening, is joined to the share, which is made out of a sword beaten into proper shape," the engraver obviously yielding to the entreaties of the Old Testament prophets (1). For the most part, New Jersey coppers can be identified as to mint and engraver but some controversy exists among the experts (2). There are a number of rare contemporary counterfeits (Maris-79, 80, 81, 83, and 84) from unknown sources but the common "serpent head" by Hatfield was manufactured in fairly large numbers. The estimate of the total number of New Jersey coppers coined from all mints includes the three million authorized coins plus another one-half to one million from other sources. A conservative count would be in the range of four million pieces.

The same irony attended the last issues of New Jersey coppers as was observed in the Connecticut series. The enabling legislation for both mints decried the abundance of the counterfeits in circulation and the fraud inflicted on the people, especially the poor, "honest & unsuspecting Citizens." (3) Following the expiration of the legal franchises in both states, coining fell into the hands of other entrepreneurs who flooded commerce with their own lightweight products, notwithstanding the fact that the coppers had the appropriate designs and labels. In New Jersey, Matthias Ogden, a celebrated Revolutionary War hero, after his less than satisfactory business experience with the authorized mints, concluded his coining career in Elizabethtown. Here, Ogden followed the popular practice of overstriking New Jersey emblems on existing coins which were significantly lighter than the prescribed 150 grains. The Connecticut coinage had also been adulterated with lightweight money from Rahway, Morristown, Machin's Mill, and other still unidentified clandestine operations. Lightweight coppers, rather than being suppressed by these state mints, were paradoxically encouraged. The circumstances surrounding the circulation of these and other contemporary coppers will be examined later in great detail.

1. Maris, Coins of New Jersey, 13; Isaiah 2:4 and Micah 4:3, "... and they shall beat their swords into ploughshares and their spears into pruning hooks ..."
2. See Breen, CNL, 255-256 and Anton, "New Jersey", CNL, 499-501.
3. Crosby, Early Coins, 207.

Plate XI

Typical New Jersey coppers with a commentary regarding the mint of origin; overstruck coppers are illustrated in Plate XVI.



Figure 1: A typical Rahway copper of 1786 and 1787 from dies by James F. Atlee. This mint produced coppers with the widest and narrowest reverse shields. These issues usually complied with the established weight standard of 150 grains. Illustrated is 1787 Maris 32-T, 144.8 grains.



Figure 2: A large planchet 1787 Morristown copper from the better dies engraved by Benjamin Dudley or Atlee. These coppers were generally of proper weight. Illustrated is Maris 62-q, 150.2 grains. Note the die weakness over the shield.



Figure 3: A 1788 Morristown copper (Maris 67-V, 141.4 grains) from inferior dies (? by Walter Mould) and typically lighter than the 150 grain standard.



Figure 4: A "1786" Elizabethtown mint copper combining an old Rahway obverse (Maris 17) with a new, but crudely engraved reverse (Maris b), made between 1788 and 1789. Whereas most of the output of this mint were overstrikes, this particular specimen (140.4 grains) coin doesn't appear to have been.



Figure 5: The contemporary "Hatfield" counterfeit, Maris 54-k. Illustrated specimen weighs 117.9 grains.



Figure 6: The "head left" issue by Thomas Goadsby from the Rahway mint, but struck independently of Albion Cox who had been committed to debtors' prison. Illustrated Maris 50-f, 148.5 grains.



Figure 7: Maris 78-dd reverse showing the "running horse" mint mark of Ephraim Brasher and John Bailey. Illustrated specimen weighs 146.6 grains and demonstrates large die breaks.



Figure 8: The finely engraved Maris "C" reverse by Thomas Wyon of the Birmingham mint used both on regular issues and several patterns. Illustrated specimen weighs 137.3 grains.



Figure 9: A 2.5 X enlargement of the Maris 6 obverse die by Walter Mould demonstrating its crude features. The "N" is upside down, the "S" is too large and the horse's ears are fashioned from an "M" letter punch.

Vermont Coppers

Although Vermont was actually the first to authorize a local mint for the production of coppers according to a legislative Act of June 15, 1785, this territory was not part of the Confederation but rather a self-proclaimed, independent republic. Vermont was not one of the original colonies; its lands were claimed both by New Hampshire and New York, with the Crown recognizing the ownership of the latter. Ethan Allen and his Green Mountain Boys were organized to defend land titles granted by New Hampshire against the intrusion of New York. This dispute became of secondary importance during the Revolution when all forces were united against the English. Ignoring the authority of both its neighbors, Vermont declared itself a republic on January 15, 1777 and so remained until admission into the Union on March 4, 1790. It was under this independent regime that copper coins were minted dated 1785 to 1788 (1).

The franchise to produce Vermont coppers was awarded to Reuben Harmon, Jr., of Rupert who engaged a New York engraver, presumably William Coley, to prepare the dies. The first issues were the handsome landscape types of 1785 and 1786, featuring the sun rising to the right above a wooded hill with a plow facing left in the foreground. The inscription, "Republic of Vermont," in various Latin forms and the date surround the design. The reverse simulates the Constellatio Nova coppers as it depicts a central eye of Providence with radiating rays to the periphery (2). The legend, STELLA QUARTA DECIMA, "The Fourteenth Star," alluded to the Republic's ambition to become the fourteenth state. The originally prescribed weight of 160 grains was unrealistic and soon was reduced to 111 grains. The franchise was constructed to run for ten years, the first half of which would require no royalties, whereas the second five years provided for a 2.5% fee, payable to the Republic.

In 1786 an obverse bust design was adopted with new legends, AUCTORI VERMON, "By the Authority of Vermont." The seated reverse figure was a likeness of the contemporary English halfpence with the inscription, INDE ET LIB, very much like the Connecticut coinage. The first piece was the famous "baby head" which has a striking similarity to the counterfeited 1786 Connecticut "large head" from the Rahway mint (1786 Miller 3-D). It has been in-

1. The major references for the history of Vermont coinage are as follows: Crosby, Early Coins, 177-202; Kenneth E. Bressett, "Vermont Copper Coinage", Chapter 11 in Newman and Doty, Studies on Money; John M. Richardson, "The Copper Coins of Vermont", reprint 1962 from The Numismatist, Vol. LX (May, 1947), 331-354; Sanborn Partridge, "Currency and Coins from Vermont's Period of Independence", Rutland Historical Society Quarterly, Vol. IX, #4 (Fall, 1979), 29-67.

2. There has been an attempt to link the 1785 and 1786 Vermont landscapes with the Constellatio Nova coppers and prove a common source. Although very similar, the reverses on these two series are not identical. See Sipsey, "Dies by Wyon", CNL, 155, 170-171.

ferred that Coley copied this design from the work of Atlee who was then employed at the Rahway facility. The Vermont bust left coppers of 1786 and early 1787 closely resemble the standard Connecticut mailed bust left series prepared by Abel Buell and debate continues as to the identity of the engravers and die sinkers for these early Vermont issues (1). Some of this mystery has been unraveled in unpublished studies by Spilman (2) who demonstrates that these Vermont coppers were produced from genuine 1786 Connecticut "complex" hubs from which the legend letters and border details were ground away and the hair on the head of the obverse bust also 'cut' or shortened by grinding. The date element on the reverse was retained ... note the shape of the 6 in the date element. The dies were sunk from these altered hubs and the Vermont legends were added on the individual dies The reverse figure on Ryder 11 [B. 9-H] is badly double hubbed (the legend letters are not) indicating inexperienced die sinking." The reverse of Ryder 15 (B. 9-I) was very poorly executed demonstrating a die break which obliterated the date causing its early abandonment and, hence, its extreme rarity. This extensive recutting used to create these Vermont dies is reminiscent of the Connecticut "Hercules Head" which was also altered from the Mailed Bust left complex hub.

In 1787, the Rupert enterprise was expanded by Harmon to include Coley who had moved from New York. About the same time, Captain Thomas Machin enlarged his operation in Newburgh and added James F. Atlee, the experienced die cutter who had left the trouble-plagued Rahway mint, as a new partner. An agreement reached between the Rupert and Newburgh mints provided that Atlee would supply Vermont dies in exchange for a profit sharing arrangements and the authority to produce Vermont coppers legally at Machin's Mill. The 1787 and 1788 Vermont bust right dies are characteristic of Atlee's engraving and the busts have a "familial" resemblance to his illegal Connecticut coppers from the Rahway mint and his imitation English halfpence from Newburgh. Both Rupert and Newburgh used a ready made source of planchets by overstriking other coppers. The Constellatio Nova coppers were heavier (3) than the required 111 grains, and are frequently encountered as undertypes for 1787 bust right coppers from the Rupert mint. A New York Act of April 20, 1787 (4) designed to curb the circulation of lightweight coppers was likely responsible for the ready availability of these Constellatio Nova pieces, invariably dated 1785. As the commercial value of unauthorized coppers dropped due to regulation, such coins assumed a greater role as ready made planchets than as inflated token money. When the Rupert mint closed early in 1789, the serviceable equipment was removed to Newburgh where some of the Rupert dies are found overstruck on Irish halfpence dated 1781 and

1. Crosby, *Early Coins*, 188-189; Bressett, *Vermont Copper Coinage*", 175-176; Breen, *"Connecticut Mints"*, 113.
2. Personal communication, March 25, 1986.
3. There is no "authorized" weight for Constellatio Nova coppers but the average weight of 22 high grade specimens is 123.3 +/- 10.8 grains. See Table XI, page 131.
4. See Crosby, *Early Coins*, 294-296, for text of this legislation.

Plate XII

The major varieties of Vermont coinage from 1785 to 1788.



Figure 1: The first Vermont issues of 1785 and 1786 were the landscape types with the classic design of the sun rising over a wooded hill with a plow in the foreground. Six specific die combinations are identified with the legend varied VERMONTS, VERMONTIS, and VERMONTENSIMUM. Illustrated Ryder-Richardson-6 (hereafter abbreviated R.R.), or Bressett 4-D (hereafter abbreviated B.), 114.8 grains.



Figure 2: The 1786 "Baby Head", R.R.- 9, B. 7-F, is supposedly designed after the 1787 Connecticut Miller 3-D by Atlee (see Plate X, figure 8). This crudely fashioned type frequently has natural planchet defects. Illustrated specimen weighs 121.9 grains.



Figure 3: There are three 1786 and 1787 Bust Left varieties, the 1787 being very rare because of an early die break through the date. Typically these issues also have planchet flaws. This series is similar in design to the Connecticut 1785 and 1786 Mailed Bust Left (see Plate X, figure 2). Illustrated specimen R.R.- 11, B. 9-H, 110.5 grains.



Figure 4: The standard Bust Right coinage was struck after July 1787 at the Rupert mint with dies by Atlee, showing the typical familial resemblance of his other Connecticut and imitation halfpence dies. Those dated 1787 were all from Rupert, Vermont, and are frequently seen over 1785 Constellatio Nova coppers. Those dated 1788 are both from Rupert and Machin's Mill with some of the latter overstruck on Irish halfpence. Illustrated is R.R.-24, B. 16-S, 106.5 grains, struck at Machin's Mill. Obverse 16 was first used at Rupert and later at Newburgh; with continued use a die break developed over the figure's armor earning the nickname "horned bust."



Figure 5: This interesting 1787 R.R.- 13, B. 17-V, is a Bust Right Vermont obverse from Machin's Mill. The reverse (Vlack 87-C) (LEFT) is from the imitation halfpence series. After use with four imitation halfpence obverses (Vlack 18, 19, 20, and 21-II) this reverse die was then ground down (CENTER) and weakened to obscure the inscription BRITANNIA and the date before muling with the Vermont obverse (RIGHT).



Figure 6: This R.R.- 27, B. 18-W (117.1 grains) is a Vermont copper from Machin's Mill bearing marked resemblance to the imitation halfpence series.

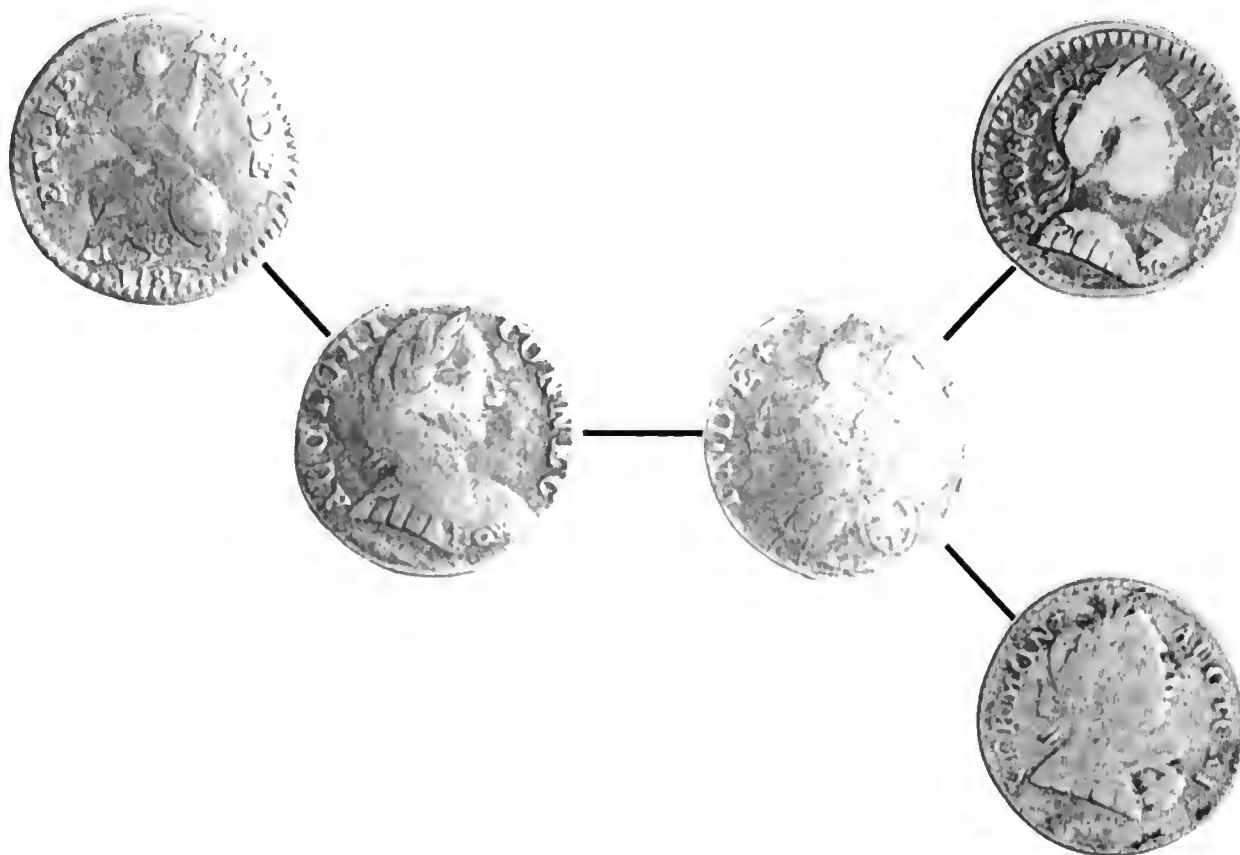


Figure 7: This illustration demonstrates die linkage between the Connecticut, Vermont, and imitation halfpence series. In the CENTER is the rare and classic coin from Machin's Mill in Newburgh (97.1 grains), known both as 1788 Connecticut Miller 1-I and Vermont B. 25-U, which is die-linked to the three different series. The obverse is an old Atlee 1787 Connecticut die which saw use in 1787 combined with Connecticut reverse Miller "A" (LEFT UPPER) as 1.1-A. This combination is shown in Plate X, figure 16. The Vermont "U" reverse (CENTER RIGHT) saw much prior service. It was combined with an imitation halfpence 1788 GEORGIUS . III. REX as Vermont R.R.-31, B. 24-U. (UPPER RIGHT) which belongs both to the Vermont and imitation halfpence series as does R.R.-13, B. 17-V (figure 5). Here the situation is opposite where the obverse die is that of an imitation halfpence. The Bressett "U" reverse saw extensive previous use with three Vermont bust right obverses; Bressett 16 as R.R.-25 (the only one pictured, LOWER RIGHT), Bressett 21 as R.R.-28, and Bressett 22 as R.R.-29.

1782 which to a large part are counterfeit (1).

The classification of Vermont coppers follows three schemes. The older one is by Hillyer Ryder, published in 1919 (2), and later expanded by John M. Richardson; the second was "issued about 1957 by Kenneth E. Bressett, using a numbering system devised by Walter Breen"(3); the last system of attribution, also by Bressett, arranges the obverse and reverse combinations in order of use.

While there is no available census as to the number of Vermont coppers minted, Bressett has estimated that there are no more than 5000 specimens of all the 38 die combinations in existence today. A rare counterfeit designated as Ryder-Richardson-5 is obviously from another source and perhaps from another era.

Machin's Mill Coinage

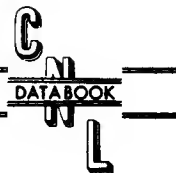
To this point much has been said about Captain Thomas Machin and his mill which seems to have been the grave yard for all other defunct coining operations since most leftover minting equipment eventually wound up in his possession. This interesting figure in early American numismatics was born in England in 1744 where he trained as an artillery cadet and civil engineer (4). He emigrated to New York in 1772 and eventually moved to Boston where his sympathies supported the patriot cause. His combined talents were used in the fortification of Bunker Hill and later in the defense of the Hudson River where he engineered the successful installation of a chain over the river at West Point to impede the advance of the English fleet. He was wounded in the War where he served as an engineer, artilleryman, and recruiter. Following discharge after eight years of service, he entered civilian life and built a number of water-powered mills. In March 1787, Machin unsuccessfully petitioned to mint coins for the State of New York. On April 18, 1787 he formed a partnership with a number of individuals, including James F. Atlee, the experienced Rahway die cutter, to mint coins in a mill he had previously erected in Newburgh, New York. This mint may have been erected in anticipation of providing a New York coinage, a proposal

1. Some of these overstruck Irish halfpence must have been counterfeit. Three lower grade Vermont coppers, Ryder-Richardson-18 and 25, averaged 107.8 grains, whereas regal Irish halfpence were minted at 134.6 grains. More Vermonts overstruck on Irish halfpence will need to be examined to determine whether any legitimate Irish host coins were ever used.

2. Hillyer Ryder, "The Colonial Coins of Vermont", American Journal of Numismatics, Vol. 53, (part 1, 1919); also in The State Coinages of New England (New York, 1920).

3. E.A.C., 88.

4. Gary A. Trudgen, "Thomas Machin - Patriot", CNL, 832-848 and "Machin's Mill", CNL, 861-882 provide an excellent resource regarding Captain Machin and his mint.



which was defeated. While no New York coinage was ever authorized, the Machin's Mill group did negotiate an arrangement with the legal Rupert, Vermont, mint on June 7, 1787 to assist them with their legal contract.

The output of Machin's Mill, described as a "manufactory of hardware," was varied (1). In anticipation that the New York legislature would authorize a state coinage, Atlee prepared a number of patterns. Such trial pieces with a New York connection include the 1786 NON VI VIRTUTE VICI/NEO-EBORACENSIS (2), the 1787 GEORGE CLINTON, and the various EXCELSIOR (3) coppers. The low mintage of these patterns accounts for their extreme rarity today.

The Machin's Mill Connecticut coppers of 1787 and 1788 have been previously described. Many of Atlee's mailed bust right 1788 Connecticut and Buell's triple leaves mailed bust left dies which came into Machin's possession are encountered overstruck on 1785 Constellatio Novas. The procedure of striking over existing coins obviously produced more profit for Captain Machin and was more expedient than original planchet preparation.

A major product from Machin's Mill was a large number of English halfpence dated 1747, 1771, 1772, 1774 to 1778, 1787, and 1788 (4). Since regal halfpence of George II were minted in 1747, and legitimate George III halfpence were made only from 1770 to 1775, the other dates selected by Atlee were indeed imaginary. Those halfpence which carried the same dates as legal issues are technically counterfeits, whereas the other fanciful ones are only "in imitation" of the real coins. This series of American made, counterfeit English coppers can be identified and attributed from die punch evidence from which Trudgen has been able to identify three chronologically distinct groups, the first two made by Atlee while in New York City, while only the last was minted at Machin's Mill after his connection with that organization (5). Atlee used punches in common with Walter Mould and John Bailey indicating some level of involvement between himself and these other coiners. These counterfeit halfpence should not be confused with the immense number of varieties of imported English forgeries with which they mingled in circulation. Evidence from the Stepney, Connecticut hoard indicates that about one quarter of the 72 counterfeit English halfpence inventoried in

1. See Trudgen, "Thomas Machin- Patriot," 842 and "Machin's Mill" 876-881.
2. This legend translates, "I Conquered by Virtue, Not by Force/of New York." Eboracus is Latin for the Roman settlement of York, England.
3. EXCELSIOR translates "Higher." Another pattern in this series has the motto, LIBER NATUS LIBERTATEM DEFENDO, "Being Born Free, I Defend Liberty." (See Tom DeLorey, "Enterprising New Yorkers Struck Own Tokens", Coin World, Wed., August 18, 1976, 22.) There is not full agreement as to the author of the EXCELSIOR coppers, Atlee (see Taxay, Comprehensive Catalogue, 32 and Trudgen, "Machin's Mill", 876-877) or Ephraim Brasher and John Bailey (see Sipsey, "Dies by Wyon", 155).
4. Robert A. Vlack, "Early English Counterfeit Halfpence Struck in America", photographic plates, 1974.
5. In press. Personal communication, James C. Spilman, July 21, 1986. Tentatively scheduled for publication in CNL No. 75.

that accumulation were of Machin's Mill origin (1). It cannot be determined from the sample uncovered in this hoard if these numbers are representative of the coppers in circulation during that period. Other counterfeit English halfpence of American manufacture dated 1784 are attributed to Swansea, Massachusetts (2). These pieces are distinctly not the work of Atlee, nor are they to be confused with Birmingham counterfeits bearing the same date, of much finer quality, and probably imported during that time (3).

The only "legal" coinage from the Newburgh mint was the Vermont series which was produced under agreement and in cooperation with the Rupert mint. The dies for all the bust right Vermont coppers of 1787 and 1788 were engraved by Atlee although some issues were minted at Rupert, others at Newburgh, and some at both locations. The busts on these Vermont pieces bear a distinct "familial appearance" with the likeness of George III on the imitation halfpence attesting to a common engraver. Those overstruck on Constellatio Nova coppers were from the Vermont mint, while those impressed on Irish halfpence, probably counterfeit, were from the New York facility. Towards the end of the minting operation at Machin's Mill, the Vermont series was carelessly executed, using old, broken, and rejected dies.

A number of mules were minted by Captain Machin, employing obverse and reverse dies from different sources. Connecticut mules of 1788 which combined Buell and Atlee dies have already been mentioned. The unusual 1788 Connecticut Miller 1-I combines an Atlee small head from Machin's Mill also used in 1787 as Miller 1.1-A and 1.1-VV with a Vermont reverse, Bressett- U. This same Vermont reverse is in turn combined with an imitation English halfpence, Vlack 22-88 Vt. This one coin, 1788 Miller 1-1, therefore, is claimed by three series of coppers, Connecticut, Vermont, and the imitation English halfpence! (See Plate XII, figure 7.)

The Vermont copper, R.R.-13, is another interesting piece. The coin made in Newburgh has a typical Atlee bust with Vermont legends but the reverse is from a intentionally ground down imitation English halfpence die (Vlack 87-C) so as to obscure the legend, BRITANNIA. This piece also belongs to two separate series. (See Plate XII, figure 5.) The Vermont 1785 Immune Columbia (R.R.-1), marries a severely damaged or perhaps rejected Vermont obverse with an equally inferior Immune Columbia reverse die purportedly brought from England to New Jersey by Walter Mould. This old die apparently came into the

1. Breen, "Coin Hoards", 22-24; Eric P. Newman, "A Recently Discovered Coin Solves A Vermont Numismatic Enigma", from Harald Ingholt, editor, Centennial Publication of the American Numismatic Society (New York, 1958), 540-542. Even today among accumulations of old English halfpence in dealers' "junk boxes", this author has found three Machin's pieces and many counterfeit Birmingham coppers.

2. Newman, "Bungtown Halfpence", 171-172; Norman G. Peters, "The 1784 Counterfeit English Halfpence", CNL, 485.

3. See Newman, "Bungtown Halfpence", 170 and Batty, Descriptive Catalogue, Vol. III, 970.

eventual possession of Machin's Mill when Mould fled to Ohio as previously related. This Immune Columbia reverse also saw service with an imitation halfpence obverse as Vlack 15-85 NY. It can be speculated that this almost illogical muling of dies occurred in the final months of Machin's Mill activity, indicative that the operation had become desperate, amateurish, and deteriorated.

There is some evidence which relates the New Jersey camel heads (Maris 56 to 58-n) with Machin's Mill or at least attributes the die preparation to Atlee. This matter will subsequently be discussed.

Captain Machin had significant involvement in early American coppers and it is appropriately asked why a Revolutionary War patriot with an honorable reputation should resort to a fraudulent enterprise? A partial answer may be that it was Atlee and perhaps some other New York City colleagues who were the principle instigators behind the counterfeit halfpence scheme, and not Machin. At any rate, activity at the mill ceased in 1790 and the Captain took up farming the following year. He died in 1816 at the age of 72.

Nova Eborac Series

The Nova Eborac coinage, attributed to Ephraim Brasher and John Bailey, also originated in New York state (1). This partnership likewise had petitioned the State Assembly for permission to mint coppers as had Captain Thomas Machin (2). Both requests were denied and the legislature responded not with a copper coinage but rather with the Act of April 20, 1787, already cited, which restricted the circulation of light weight coppers within the State.

...no copper shall pass current in this State except such as are of the Standard and weight of one third part of an Ounce averdupois (sic), of pure copper, which coppers shall pass current at the rate of twenty to a Shilling of the lawful current money of this State and not otherwise (3).

The enactment specified that coppers, to be lawful, must weigh at least 144 grains each or 48 to the pound. This condition was met by the regal English halfpence and Connecticut coppers while exceeded by New Jersey, Massachusetts, and Fugio issues. All others, including the Constellatio Nova and Vermont coppers, were categorically excluded for acceptance within New York by this legislation.

1. Sipsey, "Dies by Wyon", CNL, 155-157; Breen, "Brasher and Balley: Pioneer New York Coiners", 137-145; James C. Risk, "The Yale University Brasher Doubloon", CNL, 753-764; Bowers, United States Coinage, 156-159.
2. Crosby, Early Coins, 290, 294-296.
3. Crosby, Early Coins, 294.

It has been speculated that Brasher and Bailey likewise produced some copper patterns, as did Atlee, in anticipation of legislative approval for their mint proposal. The Brasher "doubloon" may actually have been from dies intended as patterns for the proposed copper coinage (1). Brasher's gold coin made from copper coin dies may have been so contrived to influence legislators with presentation pieces to solicit support for his project. This gold piece is called a doubloon because, at 408 grains, it approaches the Spanish doubloon of eight escudos of 417.6 grains. The New York EXCELSIOR coppers also may have been their work. The lack of official sanction notwithstanding, the Nova Eborac coppers, punch linked to Brasher's famous gold doubloon trial piece and the 1788 New Jersey "running horse" mint marked coppers, are attributed to this partnership. The small head 1787 Nova Eborac is so stylistically deviant from the other die varieties, it has been designated as a contemporary counterfeit. Crosby did not recognize the domestic origin of the Nova Eborac series which he considered to be of English manufacture (2).

The Second Massachusetts Mint

The legal state coppers described to this point were minted by private enterprise on contracts awarded by the various legislatures. Similarly, petitions for a contract coinage were addressed to the Massachusetts General Court early in 1786 by Seth Reed and James Swan, independently of each other (3). Both applications were denied in favor of a state run mint which was authorized by legislative action of October 17, 1786. Joshua Wetherle was appointed mint master and the dies were engraved first by Joseph Callender and later by Jacob Perkins, whose work can be distinguished by the "S" punch which closely resembles an "8".

The Massachusetts coinage of 1787 and 1788, conforming to the Federal resolution adopted July 6, 1785, was established with the decimal ratio dollar as the money of account where each dollar equalled one Spanish milled dollar. These Massachusetts coppers were in cent and half cent denominations thus initiating the decimal system in America and each cent contained 157.5 grains of copper complying with the Federal weight standard. Felt described this coinage with nostalgia as "familiar with the earliest remembrances and enjoyments of many, who yet survive," and further recollected that they entered circulation by about January 1788 due to several unexpected delays (4). Prior to this coinage, Felt noted that the copper medium current in the Bay State was the 1783 Constellation Nova series.

1. Taxay, Comprehensive Catalogue, 30-31; Tom DeLorey, "New York jeweler made famous rarity", Coin World, (Wed., August 18, 1976), 62.
2. Crosby, Early Coins, 296, 34
3. Crosby, Early Coins, 229-274. An excellent summary of Massachusetts copper is found in Bowers, United States Coinage, 147-155.
4. Felt, Mass. Currency, 205-207.

PLATE XIII

The Massachusetts and Fugio cents which were authorized at the common Federal standard of 157.5 grains.



Figure 1: The 1788 Massachusetts half cent, Crosby 1-B, 89.0 grains.



Figure 2: The 1787 cent, Crosby 2b-A, 145.1 grains, the so-called "horned eagle" due to the reverse die break by the bird's head. This coinage was well made and of consistent quality. Whereas this particular specimen does not reach legal weight, on the average, Massachusetts cents met the Federal standard.



Figure 3: An uncirculated 1787 Fugio cent, 11-B, no doubt from the Bank of New York hoard. This is an exceptionally heavy specimen at 171.6 grains with the average weight falling short of the authorized value.

The Massachusetts cents and half cents were well made pieces of uniform weight and quality. An Indian was depicted on the obverse and an heraldic eagle on the reverse. It was the only copper of the period with all legends in English. This state run mint proved unprofitable with expenses 55% greater than the value of the struck coins (1). Aware that the new Constitution forbade the states the right to coin money and refusing to resort to private contractors, the Massachusetts legislature ordered the mint closed on November 17, 1788, after the existing supply of copper had been exhausted.

Despite financial and production difficulties, there was no deterioration in the quality of Massachusetts coppers during the last months of the mint. Light weight counterfeit Massachusetts cents dated for both years are known from an unknown source. One variety was used as a host coin for the 1788 Machin's Mill Connecticut (Miller 16.3-N) on which it was overstruck. Legitimate Massachusetts cents would prove unprofitable as a ready source of planchets for overstruck coinage due to their heavy weight. There are no instances recorded of overstruck authorized Massachusetts cents, only the counterfeits.

New Hampshire Patterns

The cast coinage of New Hampshire dated 1776 requires mention for the sake of completeness (2). These patterns, some of which are of doubtful origin and authenticity, in fact belong to the Revolutionary period rather than the Confederation. These pieces were authorized to weigh 144 grains each and pass at 108 to the Spanish milled dollar. Their manufacture and circulation were apparently very limited as indicated by their great rarity today.

The Constellatio Nova Coppers

There has been frequent reference made to the Constellatio Nova coppers which have been attributed as a speculative venture of Gouverneur Morris who ordered the coins from the Birmingham mint with dies prepared by Thomas Wyon (2). Other Wyon dies have already been described in the New Jersey series where it was speculated they were brought by Wyon's pupil, Walter Mould, who emigrated there in 1786 (3). There have been some attempts to establish a domestic origin for the Constellatio Nova coppers, linking them with the

1. Crosby, Early Coins, 262-263.
2. Taxay, Comprehensive Catalogue, 19; Bowers, United States Coinage, 133.
3. William J. Wild, "A Remarkable Product of Machin's Mill", CNL, 370-371; CNL, 401-402, 422.
4. Breen, "Connecticut Mints", 109.

PLATE XIV

The Constellatio Nova coppers of 1783 and 1785.
The obverse "eye of Providence" surrounded by blunt or pointed rays
is similar to the reverses on the Vermont landscape issues.



Figure 1: The 1783 Crosby 1-A (126.6 grains) with the large block letter "U.S." reverse and the pointed rays obverse.

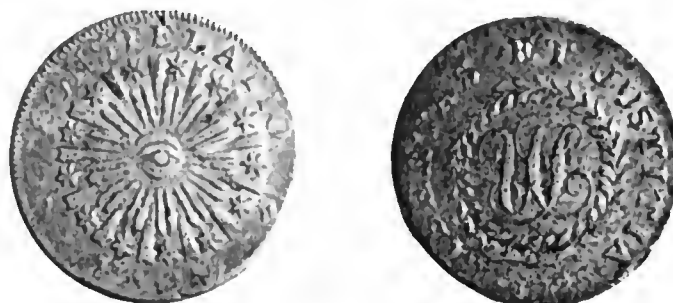


Figure 2: The 1785 Crosby 1-B (121.9 grains) with the obverse spelling error, CONSTELATIO. The reverse has a large die break at the bottom of the 31 paired leaves wreath.

Plate XV:
The 1787 Nova Eborac coppers from the mint of Brasher and Bailey.



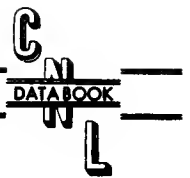
The common obverse (CENTER) is shared with two reverses with the figure seated facing either toward the left (LEFT) or the right (RIGHT). The illustrated figure left weighs 113.3 grains and the right 99.2 grains.

Nova Eborac coppers of Brasher and Bailey with which they appear to share some common letter punches. Also the reverse designs on the Vermont landscape issues of 1785 and 1786 are similar to the Constellatio Nova series, which at least indicate some degree of mutual influence (1). Despite this evidence, however convincing, contemporary newspaper accounts clearly indicate that the Constellatio Novas are an English product "coined at Birmingham by the order of a merchant in New York [Gouverneur Morris]." (2) There are three 1783 and six 1785 die pairs and three instances where a die is used in a second combination. This results in nine combinations but excludes the very rare 1785 and 1786 varieties which are contemporary counterfeits, bearing no relation to others in the series (3). Another statement, quoted by Crosby and appearing in The Massachusetts Centinel, is that 40 tons of copper were coined from one die pair alone (4). A sample of Constellatio Nova coppers suggests that they were intended to weigh about 56 to the pound or 125 grains each. Forty [long] tons would amount to over 5,000,000 pieces which indeed is an exaggeration for one set of dies, let alone the entire coinage! Considering Spilman's estimate that 50,000 impressions may even be an excessive expectation for the life of a die, the maximum number of coins minted could hardly exceed 450,000 (5). This quantity would translate into 3.59 long tons of copper.

In 1788 and perhaps into 1789, several mints, including Machin's Mill, Rupert, Vermont, and Elizabethtown, New Jersey, struck their own dies over preexisting coins at a time when it was less expensive or more convenient to do so. The Elizabethtown mint may not have had the necessary equipment to roll and cut copper stock into planchets. As already stated, the circulation of lightweight coppers was restricted in New York after August 1, 1787. Thereafter, such pieces, including the Constellatio Novas, became fair game for the coining presses of other states who sought to legitimize underweight coins by impressing on them an acceptable design and to send them off again into circulation with new identity. Examination shows that 1785 Constellatio Nova coppers were used as host coins for many 1787 Vermont coppers from Rupert (Ryder-Richardson - 14, 12 and 32; Bressett 10-K, 11-K and 12-K) and for 1788 Connecticut coppers from Machin's Mill. An occasional 1783 Constellatio Nova is found as the host for New Jersey coins from the Elizabethtown mint. The most common 1785 Constellatio Nova host coin which can be attributed is the Crosby 5-E, followed next by the 4-C and 4-D (6).

1. Sipsey, "Dies by Wyon", CNL, 154-159, 168-172.
2. CNL, 402, 422. (quote from 422, The Morning Chronicle and London Advertiser, Thursday, March 16, 1786; Eric P. Newman, "The Source of the Nova Constellatio Copper Coinage", The Numismatic Scrapbook Magazine, (January, 1960), 6-8, hereafter cited "Nova Constellatio").
3. Taxay, Comprehensive Catalogue, 16-17.
4. Crosby, Early Coins, 331.
5. James C. Spilman, "Some Comments on the Fugio Cents of 1787", CNL, 24.
6. The census of 20 identifiable Nova Constellatio host coins is as follows:

<u>1783</u>	1-A [1], 3-C [2];
<u>1785</u>	2-A [2], 4-C [5], 4-D [4], 5-E [6].



From these data, some speculation can be made about the circulation of Constellatio Nova coppers. Although dated 1783 and 1785, research by Newman suggests that the coins were not common before May, 1786 (1). Felt noted that in 1788 the most common copper in Massachusetts was the 1783 Constellatio Nova (2). Further inspection of the 1785 Constellatio Nova dies shows stylistic differences on the obverse progressing from 30 to 29 and later 26 paired leaves in the wreath. The 1785 Crosby 1-B, 2-A and 3-B have 30 pairs as do all the three 1783 varieties. The 1785 1-B shares a common obverse with the 1783 3-C, both displaying a misspelled CONSTELATIO. The six varieties mentioned, with 30 paired leaves, are less commonly seen as host coins than are the other three issues, 5-E, 4-C, and 4-D, which in and of themselves are much rarer coins. This implies that as the first group arrived in America, they directly entered into commerce, but when the second group arrived at a later date, i.e. 4-C (30 pairs), 4-D (29 pairs) and 5-E (26 pairs), the circulation of coppers was becoming sluggish and many were sold in bulk to minters. These circumstances suggest that the last three varieties of the 1785 Constellatio Nova coppers must have appeared on the scene by July 1787 for them to have been used in the Rupert mint (3). This was a time when lightweight coppers were starting to meet public resistance. The report that Felt was not familiar with the 1785 Constellatio Nova coppers by January 1788, further indicates those varieties were uncommonly seen in the Bay State by the time of the Massachusetts mint.

Crosby's scale of rarity (4) adds further evidence that the 4-C, 4-D, and 5-E varieties were not as commonly circulated as the others but bought up in quantity. He observed that the 1785 1-B is rarity 3, the 2-A is rarity 4, and the 3-B is common, whereas the 4-C is rarity 5, the 4-D is rarity 6 and the 5-E is rarity 4. While the last three coins are much rarer as unaltered coins, they are more common as host coins than the preceding three or any of the 1783 varieties. When these Constellatio Nova coppers eventually reached Machin's Mill and the Rupert mint they became host coins for 1788 Connecticut coppers and 1787 Vermont coppers, respectively. For the Connecticut coinage, the lighter weight Constellatio Nova coppers defrauded the public, but for Vermont, these ready-made host coins were heavier than the authorized weight.

These numbers are too few for statistical analysis but suggest a trend; the most common 1785 copper, 3-B, is not represented at all, whereas 4-D, the rarest of all, is frequently encountered overstruck.

1. "Nova Constellatio", 3.

2. Mass. Currency, 206.

3. Bressett notes that "nearly the entire 1787 Bust Right group of Vermont coins was produced by overstriking" but no others were produced by that method through 1788 or into 1789 when the mint closed ("Vermont Copper Coinage", 177).

4. The Crosby scale of rarity extends only to R-6, whereas current scales go to R-8 (2 to 3 specimens) and R-9 (unique). See E.A.C., 9; Anton, "New Jersey", 502.

PLATE XVI

The following are Confederation coppers overstruck on a variety of host coins.

See Appendix II for a complete listing of know overstruck varieties. See Plate X, figures 11 and 22 for two Connecticut coppers over Constellatio Novas. For clarity, these are enlarged 2.5 X.



LEFT - Figure 1: A 1787 New Jersey Maris 56-n over a 1787 Vermont R.R.-13, B. 17-V, weight 109.6 grains. The hair ribbon of the bust is in front of the horse's nose, and the residual Vermont legend CTORI ... MON is visible before and after the New Jersey inscription.

RIGHT - Figure 2: Another 56-n over a 1787 Connecticut 2-B, 137.8 grains.



Figure 3: A third 56-n which is over a Machin's Mill imitation halfpence, Vlack 19-87C, 114.2 grains, obverse over obverse. The date of the halfpence is found under the New Jersey shield.

Plate XVI (Continued)



LEFT - Figure 4: A 1787 New Jersey Maris 73-aa from Elizabethtown struck over a Nova Eborac copper, Crosby 1-A, figure seated right. Weight 120.2 grains.

RIGHT - Figure 5: A 1788 Vermont copper from Machin's Mill, R.R.- 25, B.B. 16-U, over a counterfeit Irish halfpence at 110.0 grains.



Figure 6: Of the four 1787 Bust Right coppers from the Rupert mint, three combinations are seen over 1785 Constellatio Nova coppers. The host coin for this R.R.-12, B.B. 11-K, is a 1785 Constellatio Nova, Crosby 5-E, at 121.9 grains.

Plate XVI (continued)



Figure 8: A rare combination is this 1788 Connecticut Miller 16.3-N overstruck on a 1787 Massachusetts cent, Crosby 1-B, which itself is a contemporary counterfeit (113.1 grains), perhaps from Machin's Mill. The inverted wing of the Massachusetts eagle is to the bottom right of the reverse Connecticut liberty.

Plate XVII

Irish halfpence were known to have been in circulation in America during the Confederation period (Crosby, Early Coins, 291).

Genuine pieces weighed 134.6 grains or 52 to the pound. Vermont coppers from the Machin's Mill mint appear overstruck on Irish halfpence dated 1781 and 1782, but due to their lightweight, it is likely that those were counterfeit. The illustrated specimen is genuine and weighs 134.3 grains. Enlarged 1.5 X.



The following assumptions can be made about the Constellatio Nova coppers: [1] those dated 1783 were introduced in about May 1786; [2] the first three varieties of 1785 arrived in close succession, either late 1786 or early 1787; [3] the last three 1785 varieties arrived before July 1787; [4] the rarity census noted by Crosby for the 4-C, 4-D, and 5-E does take into account that many of these coins were overstruck and, therefore, fewer exist as originals; [5] the total coinage is no more than 450,000; [6] the average weight is 125 grains or 56 to the pound.

Fugio Cents

By the late 1780's, several states had taken action against the deluge of counterfeit coppers which saturated the small change medium. Within the Confederation, Connecticut, New Jersey, and Massachusetts had established mints or arranged for contract coinages as had the autonomous Republic of Vermont. The New York Legislature responded to this raft of lightweight coins on April 20, 1787 by imposing restrictions on their currency which prohibited those under 144 grains from circulation and devaluated all others from 14 to 20 coppers per local shilling (1). New Jersey, in "AN ACT to prevent the circulation of bad and light Coppers in this State" decreed that after July 20, 1787 only its own coppers, or any produced by Congress, could pass (2).

Congress, also, resolved to provide a solution for removing undesirable coppers from circulation and proposed a full weight coin of 157.5 grains, the same Federal standard to which Massachusetts adhered (3). These new coppers were heavier than the New Jersey standard of 150 grains, the Connecticut standard at 144 grains and significantly greater than the Vermont standard of 111 grains. Since 100 of the new coins were to pass for the Spanish milled dollar, they could technically be called "cents." Petitions were received early in 1787 by Congress from both Mathias Ogden, who was involved in the Rahway mint, and James Jarvis, who had a controlling interest in the Connecticut Company for Coining Coppers, to obtain the contract to mint this proposed copper coinage. Research by Breen presents evidence that James F. Atlee prepared the 1787 Immunis Columbia coppers as patterns which Ogden

1. Crosby, Early Coins, 294-295.
2. Crosby, Early Coins, 281-282.
3. References on the Fugio coinage include: Alan Kessler, The Fugio Cents (Newtonville, Mass., 1976), an excellent resource with plates of the 55 die combinations; James C. Spilman, "Some Comments on the Fugio Cents of 1787", CNL, 24-32, 52-55, 179-183, 237-242, 320-327, 379-382; Damon Douglas, "James Jarvis", CNL, 261-265, 273-278, 285-292, 578-582, an historical account of James Jarvis and the saga of the Fugio cents, relating the entire episode.

offered in his proposal to Congress for the Federal contract (1). However, by devious means, Jarvis had already secured the privilege for his newly organized company by offering a \$10,000 bribe to Colonel William Duer. In the meanwhile, Jarvis had received 12,809 pounds of federally owned copper from Duer and later an additional 35 tons even prior to Congressional authorization for his project. The Federal contract coinage manufactured by Jarvis was the Fugio cent, the first official coin of the United States government. Of the 300 tons of Fugio coinage Jarvis agreed to produce, only 400,000 pieces were delivered by May 1788 (2). Jarvis was unsuccessful in arranging acceptable financing and as the project faltered, Jarvis departed for Europe. As previously related, much of the copper intended for the Fugio coinage was fraudulently diverted into the production of an unauthorized 3,500,000 1787 Connecticut coppers, since the mint was simultaneously striking both types.

It is speculated that the Fugio cents may have been produced at other sites other than New Haven, but this is disputed. The "Club Rays Fugios" may have come from Machin's Mill after the regular Fugio coinage ceased, but this is not proven (3). Spilman suggests that the Club Ray varieties were manufactured later than the more common and better executed Fine Rays issues, but by a different party who possessed less technical skills (4). Since it was the practice of the Machin's Mill organization to produce coppers which were lighter in weight than the genuine article, it would be inconsistent to ascribe the Club Rays to that mint since as a group they are heavier than the authorized 157.5 grains (5). Spilman postulates that Benjamin Buell produced the Club Rays, having damaged the obverse working hub from which subsequent defective dies were produced. Abel Buell, the engraver for both the Connecticut and Fugio series, was apprehensive about the mint's illegal activities, and, therefore, departed for England. His anxiety was well founded since he had previously suffered one ear to be cropped due to a forgery conviction (6).

The Fugio experiment was a failure due to bribery and corruption; It was unsuccessful in its stated purpose as recorded in the newspapers of the time (7).

1. Walter Breen, "The 'New York' IMMUNIS: A Mystery Unraveled", CNL, 667-676.
2. Spilman concludes "that the maximum possible Fugio coinage was in the order of 1.5 million." ("Fugio Cents", CNL, 24.)
3. Ancient and Modern Coins of the World, Mail Bid Sale, Coin Galleries, (New York, November 13, 1985). "New CLUB RAY FUGIO 24-MM" (TN-81), CNL, 678.
4. Spilman, "Comments on the Fugio Cents of 1787", 922-925.
5. James C. Spilman, Personal Communication, March 25, 1986.
6. Spilman, "Abel Buell", CNL, 354.
7. Crosby, Early Coins, 302.



... these (Fugio cents) will free us from the impositions to which we are now exposed from the floods of light half-coined British halfpence, introduced among us - and as, from the excellent monitorial caution, 'MIND YOUR BUSINESS,' impressed on each of these, they may prove an antidote to insurgency, they will doubtless be held in high estimation.

To make a bad situation worse, the Federal government was unable to place their 400,000 new cents into circulation and sold them in bulk to a speculator. Although the legislation of October 16, 1786 which provided for copper coinage gave it legal tender status, this provision must have been recinded or else the Fugios would never have been dumped in such an unorthodox manner by the government (1). If they had been receivable for taxes, they would have enjoyed the same popularity as the legal tender New Jersey coppers. The man who purchased the Fugio consignment was Royal Flint of New York City, who received them in June 1789, just prior to the Coppers Panic, to be described. Flint was unable to dispose of his newly acquired coppers and landed in debtors' prison when he couldn't meet his obligations. Fortunately for present day numismatists, a keg of new Fugio cents was uncovered in the Bank of New York in 1856 and again rediscovered in 1926. Over 5,000 of these uncirculated pieces have come into the hands collectors from this hoard (2).

Washington and Miscellaneous Pieces

The numismatic literature lists another series of coppers generally referred to as "Washington Pieces." Although dated 1783, coinciding with the formal end of the Revolutionary War, the only piece which was actually minted and circulated during the Confederation period is the Georgius Triumpho copper (3). This coin is either of English or French manufacture and is known to have circulated in Georgia, Virginia, and Jamaica. It is usually seen in circulated condition and falls in a weight range similar to the Constellatio Nova coppers (4). In that the Georgius Triumpho is found as a host coin for Elizabethtown coppers, they must have been in circulation in the period between June 1788 and June 1789 when that mint was operational (5).

1. Douglas, "James Jarvis", original manuscript, n.182.
2. "The First American Cent", CNL, 195-197; Kessler, The Fugio Cents, 6-7.
3. George Fuld, "Research Forum - 9", CNL, 112-117; Taxay, Comprehensive Catalogue, 16; Robert A. Vlack, "The Washington Coppers of 1783", CNL, 651.
4. The Roper Collection specimen, #368, and the Garrett Sale coin, #1699, weighed 125.8 and 135.5 grains, respectively. Crosby (Early Coins, 341) lists his coin at 117 grains.
5. William Weimer and David Hirt Collections, 98; Anton, "New Jersey", 511.

Other miscellaneous copper tokens circulated during the Confederation period, including the Bar "cent", the 1789 Mott trade token, the Albany, New York Church penny, and the 1787 Auctori Plebis token (1). These pieces are primarily of numismatic and historical interest. Except for the thick planchet Mott token which will be discussed later, all these coppers are of lightweight and were of little economic importance when compared with the heavier and more common state issues of the period (2).

Silver Coinages

Two silver coinages were current during the Confederation period, both issued privately by Maryland silversmiths. John Chalmers of Annapolis received lightweight and cut Spanish silver, the major silver change of the time, which he recoined into threepence, sixpence, and shilling denominations dated 1783 (3). Although he provided this service at a commission, his customers who brought him worn coins for reminting were assured of a full weight coin in return. In 1783, the Spanish milled dollar was worth 7.5 Maryland shillings (90 d.), and the Spanish standard was 416 grains, having been reduced from 420. The Maryland shilling was equivalent to 55.5 grains of silver, sterling, which was the weight of the Chalmers' shilling, the sixpence and threepence being proportionally less (4). These shillings

1. Taxay, Comprehensive Catalogue, 16, 34, 35. This list excludes pieces appearing after April 2, 1792 when the act was passed to establish the Federal Mint since they fall outside the scope of this book. Evidence is presented that the Auctori Plebis token is of American origin (Charles V. Duncan, "The Auctori Plebis Token and Related Pieces", CNL, 476-479). Felt (Mass. Currency, 252) was in error attributing the "1783" Washington Unity States (Baker 1) as a coin current in this period. This coinage was probably made after 1820, the reverse imitating early large cents (Taxay, Comprehensive Catalogue, 44-45; Vlack, "Washington Coppers of 1783", 650).
2. The ranges of weights are from the following sources: Garrett Collection Sales; John L. Roper, 2nd. Collection; Crosby, Early Coins, passim; and Duncan, "The Auctori Plebis Token and Related Pieces", 476. Bar cent, 85 to 87 grains; Mott token thick planchet, 164 to 233 grains; Mott token thin planchet, 108 grains; Albany Church penny, 93 to 122 grains; and Auctori Plebis, 110 to 120 grains.
3. Crosby, Early Coins, 328-330; Bowers, United States Coinage, 118; Taxay, Comprehensive Catalogue, 15. A excellent biographical sketch of John Chalmers and a description of his coinage appears by Henry W. Schab, "The Life and Coins of John Chalmers", The Numismatist, Vol. 97, #11, November 1984, 2293-2312.
4. The average weight of better grade Chalmers' coinage is as follows: five shillings, average very fine, 55.1 +/- 1.4 grains (expected 55.5); five sixpence, average very fine, 27.3 +/- 0.87 grains (expected 27.7); three threepence, average about uncirculated, 11.2 +/- 0.7 (expected 13.9). Data from Crosby, Early Coins, 328-330; John L. Roper, 2nd., Collection; The Garrett Collection Sales.

were of true weight and value and Chalmers provided a community service by removing cut and worn Spanish silver from circulation and providing a current substitute, although at "a considerable advantage to himself." (1) This series was obviously well received as evidenced by the number of well-worn survivors. The shilling dies failed early with many specimens showing a weak obverse center despite a bold periphery and good weight.

The Standish Barry 1790 threepence from Baltimore is more obscure in its origin and today is a great rarity (2). This coinage is of proper weight according to Maryland money of account (3). Its scarcity today is attributed to the very early fracture of the reverse die.

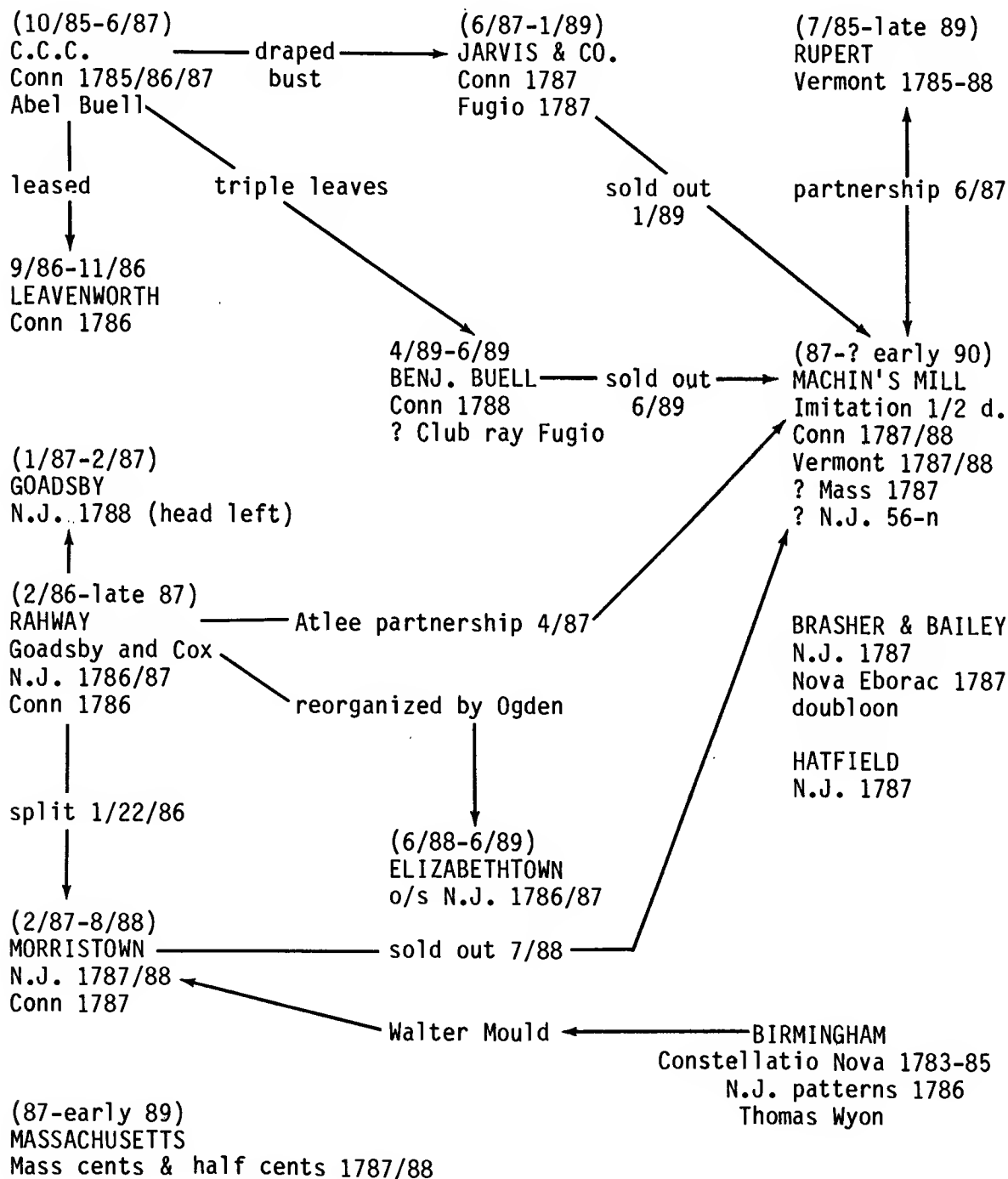
The 1783 Constellatio Nova patterns for a United States coinage were engraved by Benjamin Dudley, the same individual who made the finer dies for the Morristown and Rahway mints (4). This proposed coinage, supported by Gouverneur Morris, who also commissioned the Constellatio Nova coppers, was designed to utilize a 1000 unit decimal system but never progressed beyond the trial stage.

1. Crosby, Early Coins, 330.
2. Crosby, Early Coins, 330; Taxay, Comprehensive Catalogue, 34.
3. John L. Roper, 2nd, Collection, lot 339, in extremely fine condition weighed 13.0 grams. Full weight for 3 d. according to Maryland money of account would be 13.9 grains.
4. Bowers, United States Coinage, 134-135; "Long lost American half cent back home", "Ford reassembles set of first U.S. Coins", Coin World, Vol. 21 #1030, (Jan. 9, 1980), 1-6.

Figure I

A diagrammatic representation of the interrelationships between the various mints operating between 1785 and 1790.

Legends: (10/85-6/87) = date of operation
C.C.C. = name of mint (Company for Coining Coppers)
Conn 1785-87 = date and type of coin issued
Abel Buell = name of principal operator/engraver



THE COPPERS PANIC OF 1789

The summary of the specific copper coins minted in America during the Confederation period is now complete. This list includes some 681 die varieties or combinations of coppers produced from 1785 to 1789 or into 1790 (1). Some of the questions raised in the Preface of this book can now be examined. Why was this copper coinage short-lived and why did it fail?

Earlier chapters have described how hard money in the Colonies and Confederation, while available at a price, was never abundant except for a short time after the Revolution. The reasons for this shortage have been stated and the response of the American Colonists narrated. The need of circulating coppers as small change and money for the poor in both England and America invited the unscrupulous to fabricate lightweight counterfeit halfpence in the likenesses of William III, George II and George III. This activity brought profit to the individual minter while it damaged commerce, cheated the public, and undermined confidence in this circulating medium. Domestic violence was stimulated in New York in 1753 when the public reacted to large volumes of bogus coppers in circulation. Nonetheless, the current coppers of that period, genuine and counterfeit English halfpence, continued to pass according to the rates listed in Table IX for the next 34 years.

Some protests against the counterfeit halfpence were recorded as in the Proclamation of July 14, 1781 from the Supreme Executive Council of Pennsylvania (2) "prohibiting public officials from accepting base metal counterfeit British halfpence and recommending that the populace refuse

1. This probably incomplete list includes the following die varieties and combinations, both authorized and contemporary counterfeits, of coppers minted in America:

- Connecticut 346
- New Jersey 135
- Massachusetts 50
- Vermont 39
- Imitation English Halfpence 33 (excludes those counted elsewhere)
- Fugio 57
- New York 4
- Patterns 10
- Domestic tokens 5
- Constellatio Nova domestic counterfeits 2

This list excludes patterns and coins minted in England or Europe for use in America, such as Wyon's pattern coinages and Constellatio Nova coppers. The most important omission of imported coins are the regal and counterfeit English halfpence which were the prime coppers of the period.

2. Newman, "Bungtown Halfpence", 150-151. Crosby (Early Coins, 172-174) thought this edict referred to "bungtowns" or "evasive halfpence," a theory which has been refuted.

them." Massachusetts residents were warned of the counterfeit lightweight coppers arriving with each ship from England and the damaging effect on commerce "yet shameful as it certainly is, this inundation of base metal is passed with impunity and indifference." (1) Further newspaper reports of 1786 estimated that "nearly one half of the copper coin in this country for twenty or thirty years" were Birmingham counterfeits which passed "for the same value as those which are genuine." (2) Coins recovered from hoards and old accumulations have generous numbers of counterfeit English halfpence together with state coins, Machin's Mill imitation halfpence, and Constellatio Nova coppers (3).

The public apathy toward counterfeit coppers appeared to give way to indignation and concern when from 1785 to 1787, the various state legislatures authorized coinages of specific weight to replace the sundry English counterfeits, tokens, and other lightweight issues. While the concept was noble, the plan did not work. The legitimate Connecticut coinage, while standardized at 144 grains per coin, soon deteriorated as New Jersey mints produced a flood of Connecticut counterfeits of lighter weight. After the legal franchise expired in June 1787, the quality of the Connecticut continued to decline as clandestine mints flourished. Although the authorized three million coppers from New Jersey were up to the 150 grain standard, later issues from illegal mints were light, particularly when New Jersey designs were struck over existing underweight coins. Vermont, although outside the Confederation as an independent republic, produced coppers considerably lighter at a 111 grain standard which doubtlessly circulated outside its boundaries. Many Vermont coppers were overstruck on heavier Constellatio Nova coppers, so no fraud was perpetrated. The Massachusetts mint essentially went bankrupt since it could not afford to produce quality coinage without incurring losses. In summary, all the coinage schemes to revitalize the circulating copper medium failed and the contract mints established to improve the quality of the small change ended up producing coins just as inferior as those they were entrusted to replace.

Despite occasional protests relative to lightweight coppers, the public remained relatively indifferent about the composition of this token money until early 1787. At that time the New York legislature outlawed all coppers less than 144 grains, and devalued all others from a rate of fourteen to twenty per New York shilling, effective the first of August. Public confidence in copper, as a token coinage, which had allowed it to pass at about twice intrinsic value for all these years had started to erode. The downward spiral, having commenced was destined to demonetize practically all

1. Newman, "Bungtown Halfpence", 148, quote from Massachusetts Centinel, January 11, 1786.
2. Newman, "Bungtown Halfpence", 148, quote from the Massachusetts Spy: Or, The Worcester Gazette, Vol. XVI, #780, March 16, 1786, hereafter cited Mass. Spy and the Newport Mercury, March 27, 1786. In New York, halfpence were to pass "without discrimination" and so genuine and counterfeit coins circulated together.
3. Newman, "The Philadelphia Highway Find", 466-467.

coppers in the Coppers Panic of 1789, even during the time of a significant post-war depression.

An understanding of the Coppers Panic of 1789, when coppers lost their value and ceased to circulate, requires a detailed analysis of the copper medium of the period. The various coinages have been described in the preceding chapters. These were token or fiduciary coinages in that their metallic content was worth about half the monetary value. This was never the case with gold and silver where intrinsic and monetary values were equal. Copper coin was so expensive to mint in comparison to its pecuniary value that the practice developed in the English mint whereby the cost of manufacture was included in the monetary value of the copper coinage (1). Even at that, the minter had a substantial profit margin which encouraged counterfeiting. The acceptance of such token coinage was regulated by law and succeeded only because of public confidence in the monetary system. When commerce was flooded with coppers of inferior quality and intrinsic worth well below the regulated standard, public approval in this token system was broken and coppers fell into disrepute. Examination of the coppers current in the Confederation period will show how this situation evolved.

Table XI enumerates the various coppers known to have circulated during the Confederation period and their theoretical and observed weights. This table was constructed from specimens listed from The Garrett Collection Sales, The John L. Roper, 2nd Collection, The Bareford Collection of New Jersey Coppers (2), The Richard Picker Collection (3), and the author's collection. The assignment of the manufacturing mint follows the conventions accepted by several authorities, although these designations are not universally recognized and are open to dispute by other scholars (4). The first standard deviation was calculated for all averages to determine whether the observed weights of the coins approached within acceptable limits of error the authorized standard. Comparisons in the observed weights and the standards were made between the various coinages in Figures II to IV.

A major source of error which could not be factored out in this study was the condition of the coins in terms of wear and preservation. Frequently the state or grade of a coin is a reflection of its manufacture rather than wear, per se. This circumstance is well illustrated by Machin's imitation halfpence where the dies were shallowly engraved on purpose to simulate wear on the coin, although the specimens may have seen little circulation. Uncirculated Vermont coppers may show significant weakness in the design

1. Peck, British Museum, 106.
2. Stack's (New York, May 3-4, 1984).
3. Stack's (New York, October 24, 1984).
4. Assignment for New Jersey mints follows Walter Breen, CNL, 255-256; see also The William Weimer and David Hirt Collections, 97-98. The Maris 56 to 58-n series, the "camel heads", are considered separately due to controversy regarding their origins (see Anton, "New Jersey", 499-501). The Connecticut attributions are from Breen, "Connecticut Mints", and the Vermont from Bressett, "Vermont Copper Coinage".

because of die preparation whereas mint condition Massachusetts coppers may show exquisite detail because of high quality dies and planchets and uniform striking. "The grading of early copper state coins is very subjective, for there is no way to differentiate light wear from light striking in many instances." (1)

The most accurate weight analysis would require uncirculated specimens. Except for certain series where hoards have been recovered, namely the Fugio cents and the Virginia halfpence, such data are not available. The question arises, by how much does wear reduce a coin's mint weight? This knotty question was addressed in regard to Machin's Mill imitation halfpence where two groups were compared for weight in regard to graded condition. Ten specimens which were rated very fine or better (Table XI, group 30 a) were contrasted to seventeen coins graded very good or less (Table XI, group 30 b). The superior group averaged only 4.5 grains heavier than the inferior one, a difference which was not statistically significant. The similar standard deviation of the two groups shows them to be well matched. Hence, diminished weight does not correlate well with the condition of the coin in this particular series and probably most others unless there is marked uniformity in the original planchets. One could speculate that average wear would not diminish a copper's weight by much more than five grains or so, and that the observed weight has far more to do with the proportions of the originally prepared blank rather than the volume of metal which might have been lost due to the ravages of circulation. In general, Table XI was constructed using coins which are very fine or better in terms of preservation, thus reducing the impact of wear on the results. However, valuable comparisons can be made between groups of similar condition, and of course, the greater the sample size, the more reliable the averages. Some samples of three or more coins are included solely for interest with no real confidence in the derived results.

Significant variation exists in coins of mint state as demonstrated by the 29 uncirculated Virginia halfpence which have a standard deviation of +/- 4.54 grains. Peck lists a range of 140.9 to 167.9 grains for regal halfpence from the Tower Mint between the years 1770 and 1775 (2). In fact, the most recent halfpence of Elizabeth II in this age of advanced technology range from 84.7 to 89.2 grains with a standard of 87.5. Uncirculated coppers from colonial American mints would have been expected to show a greater discrepancy in weight since quality control would have been less developed in the late eighteenth century. Within Table XI, the smaller the standard deviation, the more uniform the coinage in weight. The most homogeneous state coinage was the Massachusetts cent, indicative of the higher quality of that series, a fact which comes as no surprise to collectors.

The weights listed in Table XI cannot be considered as absolute for reasons already stated, including such factors as conditions of manufacture

1. Garrett Sale, lot 1416.
2. Peck, British Museum, 620-621.

Table XI

**A Comparison Between Observed and Authorized Weights of
Copper Coins Current during the Confederation Period.**

Column A: Authorized weight in grains
 Column B: Observed weight in grains with standard deviation (1)
 Column C: Number of specimens examined, see text for source
 Column D: Average grade; U = uncirculated, AU = almost uncirculated,
 XF = extra fine, VF = very fine, F = fine, VG = very good,
 G = good.
 Column E: Comparison between observed and authorized weights:
 E = Observed EXCEEDS authorized standard
 W = Observed WITHIN ERROR of authorized standard
 B = Observed BELOW authorized standard
 = EQUALS AUTHORIZED weight
 NA = NOT APPLICABLE

Description of Coinage	* A *	B	* C *	D	E
1) 1787 Fugio Cent	157.5	144.2 +/- 9.6	17	AU	B
2) Massachusetts Cent	157.5	152.3 +/- 7.0	19	AU	W
3) Massachusetts Half Cent	78.75	78.7 +/- 4.9	15	AU	=
4) New Jersey; Rahway mint	150.0	149.1 +/- 7.8	175	XF	W
4a) Ogden	150.0	157.2 +/- 8.4	12	VF-XF	E
4b) Goadsby; head left	150.0	150.5 +/- 8.4	11	VF	E
5) New Jersey; 1787 Morristown mint	150.0	149.7 +/- 10.1	35	XF	W
6) New Jersey; 1788 Morristown mint	150.0	138.8 +/- 15.6	15	XF	W
7) New Jersey; Elizabethtown mint	150.0	132.5 +/- 22.3	14	XF	W
8) Elizabethtown mint, overstruck	150.0	132.0 +/- 11.7	19	VF	B
9) N.J.; Brasher and Bailey mint	150.0	145.0 +/- 8.2	16	XF	W
10) N.J.; Hatfield mint, Maris 54-k	150.0	114.1 +/- 12.3	7	XF	B
11) New Jersey; Maris 56 to 58-n	150.0	125.8 +/- 16.0	20	F+	B
12) Conn.; 1785/86 C.C.C.	144.0	136.5 +/- 11.8	30	XF	W
13) Conn.; all 1787 Draped bust left	144.0	144.7 +/- 10.8	35	XF	E
14) Conn.; 1788 Draped bust left	144.0	122.6 +/- 18.6	8	VF	B
15) Conn.; all Triple leaves	144.0	116.7 +/- 14.4	11	VF	B
16) Conn.; 1787/88 Machin's Mill	144.0	119.4 +/- 12.2	26	VF	B
17) Conn.; 1785 African head	144.0	139.0 +/- 12.2	3	XF	W
18) Conn.; 1787 Muttonhead	144.0	133.3 +/- 11.9	4	VF	W
19) Conn.; 1786 Rahway mint	144.0	120.3 +/- 19.3	7	VF	B
20) Conn.; 1787 Morristown mint	144.0	121.5 +/- 10.3	12	VF+	B
21) Conn.; 1788 overstruck	144.0	111.0 +/- 6.4	11	VF	B
22) Virginia 1773 halfpence	116.7	116.2 +/- 4.5	29	U	W
23) Vermont; 1785/86 landscapes	111.0	121.1 +/- 10.0	16	VF-XF	E
24) Vermont; 1786 busts	111.0	116.8 +/- 6.2	9	F+	E
25) Vermont; 1787/88 Rupert mint	111.0	122.5 +/- 11.4	13	VF-XF	E
26) Vermont; Machin's Mill	111.0	115.6 +/- 9.0	15	VF	E
27) Vt.; o/s on CONSTELLATIO NOVA	111.0	120.8 +/- 4.9	4	VF	E
28) Vt.; o/s on Irish halfpence	111.0	111.8 +/- 11.4	4	VG	E
29) Summary: overstruck, all states	N.A.	121.3 +/- 12.9	35	all	N.A.

Table XI: Continued

Description of Coinage	* A *	B	* C *	D	E
30) Machin's imitation halfpence	152.2	110.3 +/- 9.1	39	G	B
30 a) VF or better condition	152.2	112.6 +/- 10.4	10	VF	B
30 b) VG or lesser condition	152.2	108.1 +/- 10.2	17	VG	B
31) English counterfeit halfpence	152.2	105.7 +/- 14.8	20	VG-F	B
32) George III regal halfpence	152.2	153.4		U	E
33) Regal Irish halfpence	134.6				
34) CONSTELLATIO NOVA	N.A.	123.3 +/- 10.8	22	XF	N.A.
35) NOVA EBORAC	N.A.	126.6 +/- 19.3	8	XF	N.A.

1. This is the first standard deviation which on the normal distribution curve includes 68.26% of the specimens. As an example using the 1787 Fugio Cents group, 68.26% of the sample fall between 134.6 and 153.8 grains, with the average at 144.2. In this particular sample, the range in weight went from 122.1 to 171.6 grains, but these data are not included in the Table XI since the mean and the first standard deviation are more pertinent to this study. The range in weight just identifies very heavy and very light coins which, while not unusual, were not typical of the group. The Bar Graph representation (Figures II to IV) are constructed using the first standard deviation and not the range.

Figure II: Bar graph representation of observed weights of New Jersey coppers in grains. The authorized standard was 150 grains. See Table IX. Legend:v.... = range of 1st standard deviation; v = average.

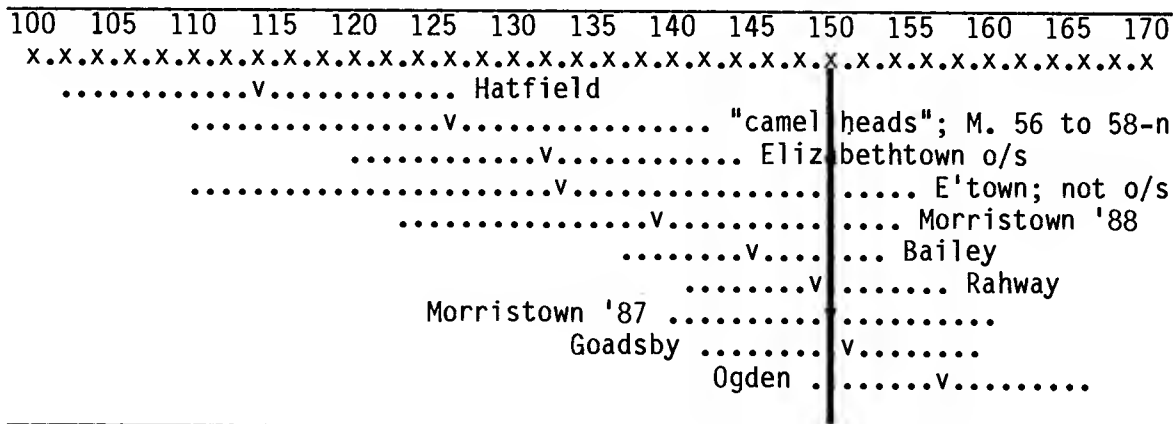


Figure III: Bar graph representation of observed weights of Connecticut coppers in grains. The authorized weight was 144 grains. See Table IX. Legend:v.... = range of 1st standard deviation; v = average.

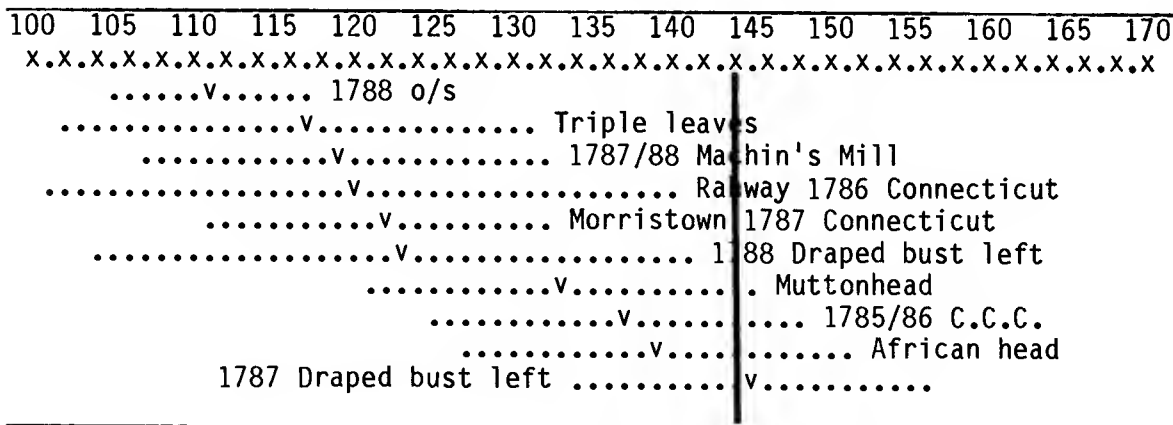
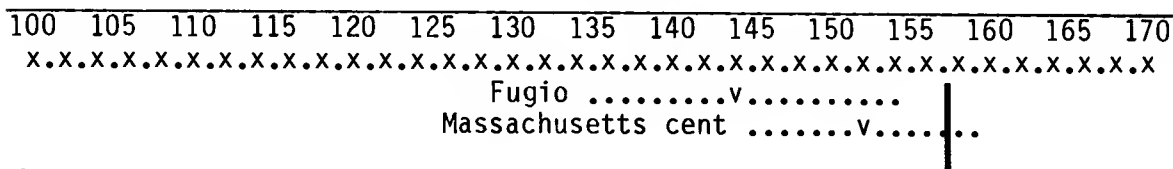


Figure IV: Bar graph representation of observed weights of the Fugio and Massachusetts cents at the Federal standard of 157.5 grains. See Table IX. Legend:v.... = range of 1st standard deviation; v = average.



and sample size. Nonetheless, whatever theoretical error may exist between these samples and the "true" average mint weight, a value which can never be known but only inferred, the coins being measured today are the coppers which actually circulated during the Confederation period and were rejected by the public during the Coppers Panic. Valuable comparisons can still be made between these several groups particular when the state of preservation is similar and the sample size large.

Table XI (Column E) separates all series into three categories relative to their respective standards, that is whether the authorized weight is exceeded (E) or equalled (=), whether the observed weights are within error (W) of the authorized standard, or whether the specimens fall below the established basis (B). Inspection of Table XI reveals that for the colonial series analyzed, only the Massachusetts half cents (group 3) equal the standard, the New Jersey issues of Ogden and Goadsby (groups 4a, 4b), the 1787 Connecticut Draped bust left (group 13), and all Vermonts (groups 23 through 28) exceeded their respective standards, despite the fact that none of these groups are in uncirculated condition. Eleven other groups, including the uncirculated Virginia halfpence (group 22), approached their legally authorized weights within the limits of error. Except for the Fugio cents (group 1), all authorized colonial coinages equal, exceed, or approach their standard within error, and can be considered to have met their legal requirement for weight. This assumption is further supported by the fact that for the most part these coins have seen some circulation and the observed weights are minimal measurements and a few extra grains can be added to extrapolate very fine specimens up to newly minted condition. Those groups of small size must be treated with skepticism and are only included for interest and at best may indicate a trend.

Those coppers which did not approach the standard, even within the limits of error, deserve closer attention. The list is led by the Fugio (group 1) where seventeen specimens in an excellent state of preservation fell quite short of the Federal standard.

Fugio weights were extensively studied by Douglas who measured their weights as individual groups for each of the varieties available to him for study (1). The average weight of the complete sample of 1810 specimens was 149.4 grains, while that for the 1639 uncirculated specimens from the Bank of New York hoard, which included eight varieties, was 149.2 grains. The average weight per group for these uncirculated eight varieties showed only a spread of three grains from 148 to 151 grains, or a variation of $\pm 1\%$, which demonstrates excellent quality control in manufacture. However, the average weight of 149.2 grains for these uncirculated coins fell 8.3 grains, or 5.3%, short of the 157.5 grain standard. The weight distribution curve constructed by Douglas shows a single peak at about 147.5 grains with the first standard deviation (68.26% of all the specimens) falling approximately between 137 and 159 grains as roughly extrapolated from his chart.

1. Douglas, "James Jarvis and the Fugio Coppers", (original unpublished manuscript), 55-65.

A third study has reported that the weight distribution curve for Fugio cents is double peaked at 143 and 155 grains with the majority of the coppers well below the authorized standard (1). While Table XI and Douglas do not identify the second peak, all three studies support the conclusion that the Fugio coinage was deficient in weight. An interesting exception is that the 18 circulated Club Rays specimens studied by Douglas averaged 152.2 grains which adds support to Spilman's hypothesis that these varieties did not originate at Machin's Mill where light weight coinages were the norm.

Douglas made further interesting observations about the variation in the size of the Fugio cents. He concluded that the weight discrepancies were due to uneven thickness of the copper sheets from which the planchets were cut. The variable diameters were a function of unequal pressures applied by the coining press with those for double struck coins significantly greater. The greater the uniformity in coin weight and size, the more sophisticated and advanced were the minting techniques which in Table XI are reflected by a smaller relative size in the standard deviation.

The Fugio group is indistinguishable from the Connecticut 1787 Draped bust left series (group 13), a relationship well described by Breen who notes their production from planchets with similar characteristics (2) and presumably from the same stock of copper. The fact that the Fugio coinage was lightweight may have provided another source of anxiety for Jarvis and an additional reason for Buell to have retired to England.

All overstruck coppers, except for Vermont, fell well below established standards, even when extra weight is allowed to compensate for wear. Overstruck New Jersey coppers attracted legislative attention, as noted in a contemporary report of June 7, 1790, which advised that such overstruck coins were so light that they should have passed at 45 to the shilling rather than the 15 to the shilling as established by law for full weight, pure copper, New Jersey coins (3). The overstruck coins from the Elizabethtown mint may have been a necessity due to the lack of facilities at that location for planchet preparation. The origin of the prolific Maris 56-n overstruck coinage will be discussed later. It is evident that the large number of lightweight, overstruck New Jersey issues undermined the credibility of legitimate coins.

The weight of an overstruck coin is obviously the weight of the host coin. The object of overstriking would be to find a host coin lighter in weight than the required standard of its new identity. Since coppers passed by number and not weight, the lighter the batch of host coins, the greater the potential profit for the minter. This explains why heavier coins, such as legal Massachusetts cents (4) and Fugio coppers are not found as under-

1. "Fugio Rarity Table, 1984 Statistics", CNL, 891.
2. "Connecticut Mints", 108.
3. Newman, "Bungtown Halfpence", 154.
4. A 1788 Connecticut, Miller 16.3-N, is found over a 1787 Massachusetts cent, Crosby 1-B, but this host coin, itself, is a lightweight counterfeit.

types whereas the use of coppers from other sources would prove profitable. As a result, New Jersey overstruck coins appear on practically every conceivable copper of the period lighter than 150 grains (see Appendix II).

The 1788 Connecticut overstruck coppers (group 21) appear on Constellatio Nova host coins except for the rare occurrence of the counterfeit Massachusetts cent undertype as previously described. The Vermont overstruck issues from Rupert (group 27) were also on Constellatio Nova coppers but in doing so, their weight standard was not violated since the average Constellatio Nova coin exceeded the authorized 111 grain standard for the Republic of Vermont.

The Irish undertypes (group 28) used at Machin's Mill for Vermont coppers were apparently counterfeit. Regal Irish halfpence of the period were minted in 1766, 1769, 1774 to 1776, 1781, and 1782 at an established weight of 134.6 grains (1). Batty described a large number of Irish counterfeit halfpence of that era including 1772, 1773, and 1783, years for which there were no legitimate Irish coppers (2). It is conceivable that with such an abundance of contemporary Irish counterfeit halfpence, some may have found their way into colonial minting presses.

Numismatists have long recognized that as a group the 1788 Morristown coppers are of poorer quality than the 1787 varieties. A statistically significant weight difference is substantiated in this current study between groups 5 and 6 of equal average condition ($p = 0.005$) (3). Not only was the weight of the planchets reduced from one year to the next, but the workmanship of the 1788 dies was inferior when compared to the quality of 1787 when many were engraved by Benjamin Dudley, a far more skilled artist than Mould. All the Elizabethtown issues, overstruck or not, are significantly lighter ($p = 0.000$) than the Rahway and 1787 Morristown coinages. Hence, there are four peaks in the weight analysis of New Jersey coppers as identified by mint of origin; all the Rahway, the 1787 Morristown and the Brasher and Bailey products fall within the accepted standard; the 1788 Morristown and all the Elizabethtown issues form the next clone but below acceptable weight; the Maris 56-n camel heads take on the characteristics of their host coins and fall third; and lastly Hatfield's counterfeit, Maris 54-k, is the anchor group at about 75% full weight. (See Figure II.)

The weight analysis of the Connecticut coppers reveals some interesting results. All the authorized coppers (groups 12 and 13) exceed or reach the legal weight. These issues represent the output of the Company for Coining

1. The variation for regal Irish halfpence was not to exceed 3.3 % (Ruding, Annals of Coinage, 75).
2. Batty, Descriptive Catalogue, Vol. III, 1023-1047.
3. This expression of probability, $p = 0.005$, means that these findings are statistically significant in that there are only five chances in one thousand that this outcome is due to a chance occurrence.

Coppers (C.C.C.) and the 1787 Draped bust left which were continued in production by their clandestine successors in business, Jarvis and Company. However, the 1788 Draped bust left (group 14), the Triple leaves varieties from uncertain mints (group 15), and those dated 1787 and 1788, generally thought to be from Machin's Mill (group 16), all fall well short of the standard of 144 grains. The Draped bust left varieties of 1787 (group 13) and 1788 (group 14) represent two statistically distinct groups ($p = 0.000$) suggesting different circumstances of production or perhaps different mints. It can be seen from these data that there was a substantial deterioration in the weight of Connecticut coppers after the expiration of the legal franchise with the exception of Jarvis' prolific 1787 Draped bust left issues. One must be aware that many Connecticut coppers dated 1787 actually were made later and predated in an effort to appear under the auspices of the franchise and the cloak of legality.

The Connecticut coppers manufactured in 1786 at Rahway and in 1787 at Morristown fall well below the standard and are appropriately considered counterfeits although from legally established facilities in another state. There is little doubt why the appearance of the 1786 Rahway bust right coppers provoked so much concern in Buell that he changed the bust design to face left so as to identify his legal 1786 coins from these spurious issues.

Crosby stated that the 1785 Connecticut coppers showed the greatest "degree of regularity" in weight when compared with the other three years (1). In writing of the 1786 varieties, he added that "few are found ... which do not reach the legal requirement of 144 grains." A sample of 28 coins from the Company for Coining Coppers of 1785 and 1786 reported by Lindesmith showed that only nine coins met or exceeded 144 grains and the average of all examined was 133.2 grains (3). The current study did not separate the 1785 and 1786 varieties but considered them together as products of the same mint. Analysis of these two years combined show them to be quite light at an average of 136.5 ± 11.8 grains. While these meet the legal requirement within the limits of error, they are significantly lighter than the Draped bust left coins of 1787 from both the Company for Coining Coppers and Jarvis mints ($p = 0.004$). Considering the 1787 issues, Crosby observed that "most of the mailed busts exceed the legal weight, though some fall much below it; the draped busts show less variation, few of them much exceeding that required, and many of them, when slightly worn, falling a little short of it." (2) The 35 Draped bust left coppers of 1787 in average extra fine condition in this study exceeded the standard.

All the Vermont issues on Table XI surpassed the established standard, an observation also recorded by Crosby (4).

1. Crosby, Early Coins, 214, 215.
2. Robert J. Lindesmith, "Striking Sequence of the Connecticut Obverse 4 and 5 of 1786", CNL, 411. The condition of all coins was not specified here or by Crosby.
3. Crosby, Early Coins, 217.
4. Crosby, Early Coins, 186.

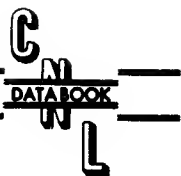
The report of the New York legislative committee of March 5, 1787 cited "Birmingham coppers," the contemporary name for counterfeit English halfpence, at 60 to the pound (1). The twenty low grade specimens in this current study indeed weigh 66.2 to the pound, supporting the committee's contention of public fraud when these lightweight counterfeits passed in commerce. The Constellatio Nova coppers were also viewed with disfavor and mint state specimens would have weighed in the vicinity of 56 per pound, again, well below the standard for New York effective August 1, 1787 of 48 coppers to the pound (2). The locally manufactured Nova Eborac coinage was hardly any heavier at about 55 to the pound and the high standard deviation emphasizes the marked variation in coin weight which infers inconsistency in planchet preparation.

The lesson to be learned from Table XI is that the authorized coinages, except for the Fugio cents, approached the legal requirements for standard weight on the average. Into 1788, most coppers, with the notable exceptions of Massachusetts and Vermont, fell below the authorized weights when coining was conducted without legal franchise and when overstriking became common practice. Counterfeit English halfpence and Constellatio Nova coppers were never up to legal measure except perhaps in Vermont. There is little wonder why public confidence in the copper medium began to dwindle, leading to the its devaluation and eventual rejection as money. Even though mints were authorized for the expressed purpose to improve the quality of the small copper change, a paradoxical effect was encountered as the condition of this coinage continued to deteriorate and matters were worsened.

If the coppers listed in Table XI were prescribed to pass "by consent without discrimination" in New York at fourteen to the shilling, it is evident that the intrinsic value of the coins received in commerce would depend on the varieties of coins offered and accepted although the "token" values would be equal. To personalize the question, if you were a New Yorker of the late-1780's, would you prefer to receive from your debtors lightweight or regulation weight coppers? Since the heaviest of the coins in Table XI contain 50% more copper than the lightest, it is evident that only public confidence in this token medium allowed such disparate coins to circulate side by side. However, the legislative report of March 5, 1787 already cited suggests that this "public confidence" was beginning to fray (1). This document listed the

... various sorts of copper coin circulating in this State, the principal whereof are,
First. A few genuine British half-pence of George the Second, and some of an earlier date, the impressions of which are generally defaced.

1. Crosby, Early Coins, 291.
2. Crosby, Early Coins, 294.
3. Crosby, Early Coins, 290-296, quote 290-291.



Second. A number of Irish half-pence, with a bust on one side, and a harp on the other.

Thirdly. A very great number of pieces in imitation of British half-pence, but much lighter, of inferior copper, and badly executed. -- These are generally called by the name Birmingham Coppers, as it is pretty well known that they are made there, and imported in casks, under the name of Hard Ware, or wrought copper.

Fourthly. There has lately been introduced into circulation, a very considerable number of coppers of the kind that are made in the State of New-Jersey. Many of these are below the proper weight of the Jersey coppers, and seem as if designed as a catch-penny for this market.

This report is of interest in that no mention is made of genuine George III halfpence but only the counterfeits which obviously outnumbered the former, a fact that will be later explained. Thus, these Birmingham coppers are described as being the chief small money of the period. The lightweight New Jersey coppers censured by the committee were probable Hatfield's counterfeits (group 10) since none of the other underweight New Jersey coppers had appeared by the Spring of 1787 and this Maris 54-k is a fairly common coin (1).

This committee report continues as it makes a public exposure of the excessive profits turned by those who produced the regal and counterfeit English halfpence and the New Jersey coppers. It was estimated that a pound of suitable copper for cutting into blanks would cost no more than 20 d., New York money, and that the additional expense for minting would not exceed 6 d., for a total cost of 26 d. per pound of token copper coins. A summary of the financial disclosures presented by the committee are found in Table XII together with some corrections made for errors in their calculations. The committee acknowledged that they "have not been able to ascertain with any degree of accuracy" the "real expense of coinage." While the committee correctly quoted the cost of copper, it significantly understated the production costs. Published accounts from the Tower Mint indicated the charges for planchet preparation, moneyers, engravers and smiths was 7 d. sterling (12.4 d. New York money), or twice the committee's estimate of 6 d. The actual profit for Tower Mint halfpence was stated at 10.8% and 16% for the 1773 Virginia halfpence, excluding any shipping and insurance fees to America (2). This is a far cry from the 57% calculated by the committee. Minting costs for clandestine operations producing Birmingham halfpence must have been lower than those from well regulated mints with coins of standard weight and composition. Profits would have been substantially higher for a counterfeiting venture but defy accurate computation. The profits for the New Jersey coppers were grossly misstated, with no provision made for the 10% royalty owed to the state for the franchise from the legal mints, all of which were known to have had serious financial difficulties.

1. The William Weimer and David Hirt Collections, 107.
2. Table VI; Newman, Virginia Halfpence, 20.

TABLE XII

**A Summary of the New York Legislature Report of March 5, 1787
Defining the Profits Accrued to the Minters of Copper Coins
and the Loss to the Public When Accepting Token Copper Coinage
(Crosby, Early Coins, 291-292).**

Coinage	A	B	C	D	E	F
English halfpence (1)	48	41 d.	21 d.	51 %	36 %	57 %
" corrected	46	39.4 d.	19.4 d.	49.2 %	34 %	51.5 %
Birmingham halfpence	60	51 d.	31 d.	61 %	49 %	96 %
New Jersey coppers (2)	46.4	40 d.	20 d.	50 %	35 %	54 %
" corrected	46.7	"	"	"	"	"

A = number of halfpence/coppers per pound avoirdupois of copper.

B = token value in commerce of one pound halfpence/coppers.

C = difference (loss to public) between token value (B) and intrinsic value of copper at 20 d. per pound.

D = % difference (loss to public) between token and intrinsic values. (C/B)

E = % loss in commerce between the token value (B) and the total cost of one pound of coins, 26 d., i.e. copper (20 d.) plus estimated mint costs (6 d.), as estimated by committee. (B-26 d./B)

F = % profit to minters. (B-26 d./26 d.)

(1) The weight of the regal English halfpence was misstated in the report at 48 to the pound and corrected here to 46.

(2) The weight of the New Jersey coppers was in error but the calculations are not altered.

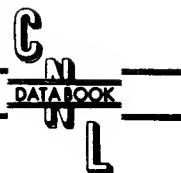
Some indication of the actual operating expense for a quality mint can be gleaned from the accounts published by the Massachusetts mint which is known to have incurred substantial losses (1). A report by John Hancock made on June 19, 1788, to the General Court estimated the cost of minting coppers, exclusive of the metal, not to exceed 8.5 d. per pound, Massachusetts currency. This sum is equivalent to 6.4 d. sterling and agrees with the 7 d. figure from the Tower Mint (2). Converting the reported Massachusetts mint

1. As of November 21, 1788, the Massachusetts mint had an accumulated loss of £ 519 14 s. 4.5 d. on the production of £ 939 (\$3130) in coppers, excluding the investment in land, buildings and equipment (Crosby, Early Coins, 262).

2. Crosby, Early Coins, 262. Hancock reported that the expense to mint \$15,000 in coppers (exclusive of metal) would not exceed £ 1200. See Appendix I for calculations.

$(\$15,000 \times 100)/44.4 \text{ coins/lb.} = 33783.78 \text{ lbs.}$

$\text{£ } 1200/33783.78 = 8.5 \text{ d. (Mass.)} = 6.4 \text{ d. sterling} = 11.4 \text{ d. New York/per lb.}$



costs to New York currency, the price for manufacturing a pound of quality coppers translates into 11.4 d. Other information regarding contemporary mint cost was published in The Pennsylvania Mercury, and Universal Advertiser of July 30, 1789, regarding the Congressional contract for the Fugio cents. This news release placed the cost of minting one pound of copper at 20 ¢, which converts to 11.5 d. New York currency (1). These three quotations for the cost of turning one pound of copper into regal halfpence, Massachusetts cents and half cents and Fugio cents are in excellent conformity and are about double the 6 d. supposed by the New York committee. If the mint costs in New Jersey were of the same order as those in Massachusetts, and there is little reason to suppose otherwise, the committee again made a significant understatement as it did with the Tower Mint and the regal English halfpence. It will also be recalled that Benjamin Dudley, the skilled New Jersey engraver and die sinker for both the Rahway and Morristown mints sued Cox and Mould for unpaid wages, attesting to the fact that his services were costly. In Massachusetts, the initial engraver Joseph Callender was dismissed because his dies were so expensive at £1 4 s. each (2). These charges were formidable for the struggling mints and were not properly appreciated by the New York Legislature. Although erring in one area of their report, the committee was quite accurate in estimating the price of a pound of copper at 20 d., New York currency. This same material was purchased by the Massachusetts mint at 14.7 d. (19.6 d. New York money) and was quoted for the Fugio coinage in same article of The Pennsylvania Mercury at 12 ¢, or 19.2 d., New York (3). Another newspaper account placed the European cost of sheet copper ready for manufacture at 10 d. per pound (17.8 d. New York) but excluded shipping costs to America. In Pennsylvania cut pieces of scrap copper sold for 10 d., local money (4).

These revised data, based on the information derived from the Tower Mint, Massachusetts mint, and Fugio quotations, allow for the following

1. #424, hereafter cited Penna Mercury. Although these estimates were published regarding the Fugio coinage, they do not reflect the actual costs due to Jarvis' manipulations of Federal copper supplies.
2. Crosby, Early Coins, 251.
3. 7049.5 pounds of copper were required to produce # 939 (72 d., Mass. currency = 100 ¢) or 313,000 Massachusetts cents. This metal was stated to have cost £ 431 19 s. or 14.7 d. per pound (Crosby, Early Coins, 262). The intrinsic value of the copper equalled 46% of the token value of the coin in keeping with other legal copper coinages.
4. The Federal Gazette and Philadelphia Evening Post, Vol. II, #106, August 1, 1789, hereafter cited Federal Gazette.
5. Calculation of these data in New Jersey money of account derives the same 13% answer due to the relative values of both New York and New Jersey moneys of account pegged to the Spanish milled dollar as noted in Appendix I.

recalculation of the cost of producing New Jersey coppers per pound in New York funds (5):

Yield per pound at 150 grains:	46.4 coppers
Cost of copper per pound:	19.6 d. (Mass. mint data)
Revised minting costs per pound:	11.4 d. (Mass. mint data)
Royalty of 10 %:	4.0 d.
Total cost:	35.0 d.
Token value at 14 coins/shilling:	39.7 d.
Profit per pound:	4.7 d.
% profit = profit/cost:	13 %

This recalculated 13% profit statement differs significantly from the 54% proposed by the committee and is in line with the published reports of the Tower Mint. A devaluation from 14 to 20 coppers per New York shilling would reduce the token value of a pound of New Jersey coppers to 28.0 d. and thereby turn a profit into a 20% loss on those coins circulating in a New York jurisdiction. An exchange rate of 16 coppers to the shilling would have been a break-even point where all costs and royalties would have equalled the token value. At a rate of 28 coppers to the New York shilling, the intrinsic value of the copper metal would have been at par with the monetary value of the coins and technically these copper coins would no longer be a token or fiduciary coinage.

If the franchise owners of the New Jersey mint recovered only a 13 % profit exclusive of any other miscellaneous expenses such as interest payments, rents, bonds, insurance, and cartage fees, it is understood why both the Rahway and Morristown operations engaged in producing illegal Connecticut coppers which were considerably lighter than the standard and from which no royalties were exacted. Table XI (groups 18² and 19) lists the average weights of Connecticut coins minted in New Jersey. If a "mint weight" of 124 grains is supposed, then a recalculation of the known data in New York funds, omitting the royalties paid to the State of New Jersey, demonstrates the profit incentive, 56% by these calculations, for Mould, Goadsby and Cox to have entered this illegal scheme.

Yield per pound at 124 grains:	56.5 coppers
Cost of copper per pound:	19.6 d. (Mass. mint data)
Revised minting costs per pound:	11.4 d. (Mass. mint data)
Royalty:	none
Total cost:	31.0 d.
Token value at 14 coins/shilling:	48.5 d.
Profit per pound:	17.5 d.
% profit = profit/cost:	56 %

Overstriking existing coins became financially advantageous when coppers could be bought up in bulk and planchet preparation was unnecessary. This was common practice at the Elizabethtown mint after June 1788 and by those responsible for the "camel head" varieties (Maris 56-n etc.). Some estimate of the benefits accrued from overstriking can be extrapolated from our current knowledge. There are reports from New Jersey by July 20, 1787, when only coppers of that state and United States coppers were allowed to

circulate (1), and that halfpence were passing up to 30 to the shilling. In New York all coppers lighter than 48 to the pound were demonetized after August 1, 1787. These monetary restrictions made an enormous number of non-negotiable coppers available for coining presses which could masquerade their true identities by imprinting them with acceptable New Jersey designs. Coins thus altered could be spent in New Jersey, where they were legal tender for taxes, and in neighboring New York. The cost to the minter for these coppers to use as host coins is hard to ascertain although scrap copper sold for an equivalent of 10 d. per pound, about half the cost of rolled-planchet material. The cost for stamping blank planchets amounted to about 12% the total minting costs at the Tower Mint (2) so there was a considerable saving to be realized when cheap coppers were overstruck. However, there was another uncalculable cost for annealing the existing coins which prepared them for restamping with a new image. This heat process softens the metal lest the dies be damaged and fail early. Groups 8 and 11 from Table XI give the average weights of the Elizabethtown overstrikes and the "camel heads" for which "mint weights" can be extrapolated to demonstrate the augmented profits, in New York funds, for this process.

	Elizabethtown	"Camel heads"
Average "mint weights":	136 grains	128 grains
Yield per pound:	51.5 coppers	54.7 coppers
Range of cost, copper per pound:	10 d. for scrap	to 19.6 d.
Stamping costs (12% total costs):	1.4 d.	1.4 d.
Royalties:	none	none
Minimum to maximum total costs:	11.4 d (min.)	to 21.0 d. (max.)
Token value at 20 coins/shilling:	31.0 d.	32.9 d.
Profit, minimum:	10.0 d.	11.9 d.
maximum:	19.6 d.	21.5 d.
% profit = profit/cost, minimum:	32 %	36 %
maximum:	63 %	65 %

Since many of the above numbers are only educated guesses and cannot be derived with certainty, the primary purpose of these computations is to show the order of magnitude of the potential profits when minting procedures were manipulated to decrease fixed costs. The computation for the token value of the preceding overstruck coins passing in New York has been advanced from 14 to 20 since the exchange rate increased effective August 1, 1787. These particular issues did not appear until well after that date. New Jersey coppers overstruck on lesser coins elicited official attention in a New Jersey legislative report of June 7, 1790 which denounced overstriking, called attention to the increased profit margins, and further suggested that such pieces should pass at 45 rather than 15 to the shilling (3).

1. Newman, "Bungtown Halfpence", 153-154.
2. Craig, London Mint, 427-428.
3. Newman, "Bungtown Halfpence", 154.

Primarily because of their unfamiliarity with production costs, the New York Legislature's ad hoc committee on copper coinage substantially exaggerated the profits earned from the legal mints in England and New Jersey on the manufacture of coppers, although they were correct to have concluded that counterfeit operations fared very well. Motivated perhaps by this inaccurate study, the Legislature denied the petitions of Ephraim Brasher and John Bailey and subsequently that of Captain Thomas Machin to supply a quantity of contract coinage for the state. Rather than to facilitate more alleged windfall profits for private minters, the legislature instead devalued the copper currency, reducing the losses incurred to the public when they accepted this inflated token medium in commerce. This devaluation occurred in the midst of a significant economic depression suggesting that public pressure must have been considerable.

Effective August 1, 1787, only those coppers could pass in New York which met a standard of one-third ounce (145.8 grains), avoirdupois, pure copper or 48 to the pound. Such acceptable coppers would be current at 20 to the New York shilling, a 30% reduction in value. This new law effectively demonetized all coppers in New York except those legal halfpence from the Tower Mint, which were few in numbers, Massachusetts and legal New Jersey coppers, and the new Fugio cents which were supposed to adhere to the new Federal standard. As already commented, this regulation, while removing many lesser coppers from circulation, also encouraged mint operators to salvage their shrinking profit margins by overstriking non-negotiable coppers with acceptable designs, by reducing planchet weight, and by decreasing the overall quality of their coinages. The fact that so many Connecticut coppers were used as host coins for New Jersey issues indicates that this series was not well regarded in commerce in the New York and New Jersey area even though such money was only slightly less than the new weight requirement.

It appears that at both the state and federal levels, New York had adopted an official hard line policy to regulate better the token copper medium. Their Congressional delegation had been instructed to alter the Federal standard so that the value of copper coins would only equal the intrinsic value of the metal plus no more than the actual expense of minting the coins (1). This was an additional attempt to close the gap between intrinsic and commercial values which would discourage counterfeiting and profiteering, increase public confidence in the medium, and drive inferior coinages out of circulation.

The Coppers Panic of 1789

Following the copper devaluation in New York of August 1, 1787, nothing further is recorded until the summer of 1789 as the situation became more unstable. At a meeting of the New York Common Council on July 21, 1789, copper coinage became the object of discussion and generated the following

1. Douglas, "James Jarvis", CNL, 285-286.

notice which was subsequently carried in newspapers from Massachusetts to Pennsylvania (1):

Whereas great inconveniences have arisen to the inhabitants of this city by the depreciation of the present circulating copper coin, occasioned by the transportation thereof from neighboring states, in some of which this board is informed the same is estimated at a much less value than it has for some time passed at in this city, and this board conceiving it their duty to interpose their advice on this interesting occasion, do recommend to all the inhabitants of this city, to receive and pay the same coin at a rate of forty-eight coppers for one shilling.

A warning about the potential speculation in devalued coppers was delivered in an editorial in The Connecticut Journal of July 29, 1789 (2):

The sudden and merited death of Coppers, must be gratifying to the Commercial Interests of this State, which has long been burdened with that unwieldy medium. I wish that the farmers and industrious poor may have such timely notice of this event, as to prevent their imposed upon by the pitiful rascality of those vermin called Takers-in. Coppers are now passing in New-York at sixty-four for a shilling lawful money, and very dull at that; and in this place (New Haven, Connecticut), at five and six for a penny (60 to 72 per shilling), and no larger quantity received (even at any rate) than is absolutely necessary for change. I am informed from substantial authority, that a considerable quantity of coppers have been purchased up in this town, since their depreciation, at a very low price, and carried into the country, with a view of inlisting (sic) the unsuspecting farmer with them, at a rate of twenty-seven to the shilling.

The financial chaos of late July and early August of 1789 caused by the collapse of circulating coppers is well described by another report datelined New York and reprinted in many localities (3).

A correspondent believes that the confusion, and consequent distress occasioned by the sudden stoppage to the circulation of copper coins, are subjects that call for the immediate attention of authority: The poorer class of citizens are particularly affected by this circumstance, many of whom had their little all invested in this most uncertain of all human possessions -- a fluctuating

1. The account appeared originally in The Daily Advertiser (New York), Vol. V #1379, July 22, 1789 and was reprinted in at least eight other major newspapers.
2. (New Haven), #1135.
3. The Independent Gazette or, The Chronicle of Freedom (Philadelphia) Vol. VIII, #1130, July 27, 1789, hereafter cited Independent Gazette.

medium: Many of the retail shops are shut: The cries are suspended in the streets, and it is with difficulty the poor can purchase bread of the bakers (1), or vegetables in the market: This evil has long been foreseen, and yet the base trumpery called coppers (greatly inferior to Wood's infamous brass money (2)) has been pouring in on us like a flood for many months past: Many of the merchants and shop-keepers, it is said, have large sums by them of this coin, by which they will be great sufferers.

The preceding commentary describes an almost complete cessation of circulation of coppers and subsequent damage to many small businesses and the poor. This disaster occurred during an exceptionally hot spell of weather in August 1789, when the temperature was so oppressive that "several shop keepers have shut up their shops and retired to the country for a few days." (3) Whether this commercial holiday was caused by problems with copper coinage or the intensity of the weather, or a combination, the result was that the poor and those merchants holding a large number of this "fluctuating medium" bore the brunt of the devaluation. Again it is emphasized that these coppers lost their value during a post-war depression with a continued specie shortage. The value of other moneys and the price for bills of exchange remained stable during this same time (4).

It is of interest to recall the contemporary descriptions of the circulating coppers in which the public had lost confidence. Previous mention has made of the March 16, 1786 report from Massachusetts asserting that "nearly one half of the copper coin in this country for twenty or thirty years past " had been counterfeit English halfpence and that more recently "A large number of counterfeit Copper Coin manufactured in this and the Neighboring States, [had] ... been in circulation in this Commonwealth." (5) In March 1787, the New York legislative committee listed the principal coppers currently in circulation as "a few" regal halfpence of George II and earlier monarchs, "a number" of Irish halfpence, "a very great number" of counterfeit English halfpence presumably of George III, as well as "a very

1. A pound of bread sold for four coppers (New-York Journal, #1747, June 27, 1776).
2. Wood's coinage was also recalled in Philadelphia Common Council debate.
" ... and any person that was acquainted with ancient history, might remember the kingdom of Ireland was nearly ruined by one Wood, who procured a patent from the House of Commons to coin 108,000 l. sterling in copper" ("For the Chronicles of Freedom", Independent Gazette, Vol. VIII, #1135, August 1, 1789.
3. Penna. Mercury, #424, July 30, 1789.
4. Federal Gazette, Vol. II, #120, August 19, 1789.
5. Mass. Spy, Vol. XVI, #780, March 16, 1786. This statement implies that there were several clandestine mints active in the region; however, without firsthand knowledge, it is unlikely that the writer could have distinguished between coins which were locally manufactured and those imported.

considerable number" of legal and counterfeit New Jersey coppers (1). Another writer described the following coppers which he had encountered in circulation (2): 1727 French copper at 182 grains, 1698 French liard at 54 grains, 1773 Virginia halfpenny at 120 grains, 1783 Constellatio Nova at 145 grains, 1764 half stiver [?] at 38 grains, and a smoothly worn English halfpence at 156 grains.

Another assertion appeared which stated that 95% of the coppers in New York were counterfeit (3).

... about 19 parts in 20 of the copper coin now in circulation in America are counterfeit - some of them are made of copper tolerably fine, but about one third part of their proper weight deficient: others are about the proper weight, but so adulterated with a baser mixture as to be more than one third deficient in value: and others deficient both in weight and fineness.

While the contention that 95 % of the coppers were false was challenged by another writer as an exaggeration, it was agreed that the coins were lightweight (4). The Philadelphia Common Council, itself, drew attention to the circulating copper medium and remarked that it was so variable both in weight and fineness that it was impossible for them to offer an opinion about its real value, hence that board would not commit itself to a recommended exchange rate as had their New York counterparts (5). The decision regarding exchange rate was left to the discretion of the individual, but the Council did observe "that the copper contained in a pound weight avoirdupois of the best of them is not equal in value to one shilling Pennsylvania money, and that the far greater part of them are mixed with base metal, of which it will require from sixty to eighty to weigh a pound." One editorialist actually experimented with weighing twelve coppers "of [the] kind generally in circulation among us" and calculated the average at 116.6 grains (6). Although there was no further description of the pieces, their deficiency is obvious.

Despite this obvious and well publicized excess of inferior coppers, a news report from July 31, 1789 exposed the scheme of an unnamed Philadelphian, who, already an importer of counterfeits, was preparing to open a mint for the manufacture of bogus copper coins in order to increase his profits (7). Other domestic counterfeiting operations were smashed during that summer and the public was warned through the press to beware of false 1781 and 1789 [Spanish milled] dollars, 1770 French crowns, and

1. Crosby, Early Coins, 291.
2. Penna. Mercury, #424, July 30, 1789.
3. Federal Gazette, Vol. II, #106, August 1, 1789.
4. Federal Gazette, Vol. II, #112, August 8, 1789.
5. Federal Gazette, Vol. II, #103, July 28, 1789.
6. Federal Gazette, Vol. II, #107, August 3, 1789.
7. Independent Gazette, Vol. VII, #1134, July 31, 1789.

doubloons which contained 16 to 20% alloy (1).

The answer to the generic problem of an unstable copper medium and the current panic can be traced back to the comments of Sir Isaac Newton in 1713 when he was the Master of the Tower Mint (1699-1727). He advocated that the token value of copper coins should never exceed the actual cost of the metal and the expense of manufacturing. No profit should be allowed. He urged that the supply of this token coinage be limited to the needs of the economy and an excessive supply be avoided (2). All these tenets had been violated in both England and America where the Crown and minting patentees derived a profit. This potential gain encouraged illegal operators to engage in wholesale counterfeiting until soon false halfpence outnumbered the genuine and these bogus coins clogged commerce on both sides of the Atlantic. Not only were the legal coppers greatly outnumbered by the false, lightweight ones, but it was also recognized that "the quantity of this coin in circulation throughout America is ten times greater than necessary for change." (3) As could be predicted from Newton's admonitions regarding copper coinage, it was only a matter of time before public confidence in a surplus, mostly counterfeit token coinage would fail and the house of cards collapse.

Much editorial speculation regarding the cause of this copper panic appeared particularly in the Philadelphia papers. It was suggested that there should have been governmental intervention and it was "acknowledged that the power of regulating the value of coin or money is in the Congress, but this is a desperate case that requires immediate relief; and therefore something should be done until that body took it up." (4) Realizing that local governments were impotent to provide a final solution for this copper devaluation, most municipal authorities were anticipating that with the promised appearance of the new Fugio coins from Congress, the copper problem would be solved, but, alas, that expectation was only wishful thinking (5).

When this emission appears all foreign copper coin may be thrown out of circulation, and if Congress limit the quantity they issue within reasonable bounds, the evil will be wholly done away.

1. The New Hampshire Gazette, and the General Advertiser (Portsmouth), Vol. XXXIV, #1717, July 30, 1789, and #1719, August 13, 1789; Mass. Spy, Vol. XVIII, #850, July 23, 1789; Independent Chronicle and the Universal Advertiser (Boston), Vol. XXI, #1086, August 20, 1789; The American Mercury (Hartford, Conn.), Vol. VI, #264, July 27, 1789; The Middlesex Gazette, or, Federal Adviser (Conn.), Vol. IV, #125, July 25, 1789.
2. Craig, London Mint, 220. Recall the surplus of coppers authorized under William Wood's patents.
3. Federal Gazette, Vol. II, #106, August 1, 1789.
4. "Strictures on the Publication of the Common Council Respecting Coppers", Federal Gazette, Vol. II, #104, July 30, 1789, hereafter cited "Respecting Coppers".
5. Federal Gazette, Vol. II, #106, August 1, 1789.

One writer observed that the lack of small bills of paper money below five shillings was another factor responsible for the troubles with the copper medium (1). He postulated that in the absence of a paper money alternative for small change, the public became dependent on copper which was then introduced in massive quantities until its confidence was abused. If small paper notes redeemable in specie had been available, then less reliance on copper would have developed, discouraging manufacturers, speculators, and importers of counterfeits.

In a letter to the editor of The Independent Gazette, one reader made an astute commentary further defining the cause of the copper problem and proposing a solution (2):

The present confusion at New-York and Philadelphia about the coppers ... has altogether arisen from the currency given to base falsifications of the British half-pence. Had these counterfeits, easily discoverable ... been steadily refused at the time, (above a year ago) when the regulation of 24 (sic) coppers for a shilling took place, all had been well. But the alteration just mentioned, instead of relieving us, has only given new opening for speculation; then foretold, and since eagerly laid hold of. The true British copper coin, lowered under its value in England, has ever since been collecting and sending to London, as a profitable remittance; whilst the makers of the base imitation have still found their advantage in sending over their manufactures, which the Americans, though these raps for the most part have not even the colour of copper, are weak enough to receive. The direct remedy to the disorder is obvious and easy; restore the genuine British half-pence, such as bears the effigies and inscriptions, plainly and legibly, to the rate of 15 or 16 to the shilling, here and at New York; and inflexibly reject all raps, counterfeits, and worn coppers. This is the only, but the sure guard against a deluge of false copper coin in Europe. Thus the coppers which remain in circulation, would be nearly worth the price at which they pass, we shall be relieved of the counterfeits already here, and wholly prevent further importations of them. It is strange that the fathers of New-York and Philadelphia should not have advised to this course here pointed out, till Congress interpose, and supply a legal medium for change and small dealings.

There is a confusion in this letter regarding the exchange rate of coppers, which as of August 1, 1787, was 20 to the shilling, not 24 as the writer indicated, unless by local practice the rate had advanced without legal authority. While the New York Legislature was able to establish exchange rates in 1787, the new Constitution came into effect March 4, 1789, granting this right only to Congress which took no positive role in

1. Independent Gazette, Vol. VIII, #1134, July 31, 1789.
2. Vol. VIII, #1137, August 4, 1789.

alleviating this crisis. This writer observed that with the devaluation of the halfpence in 1787, it then became profitable to gather up all genuine and unworn halfpence in New York at a reduced cost and return them to England where they could be negotiated at full value with a 48% gain in the transaction. It, therefore, comes as no surprise that genuine George III halfpence, which were not even a common coin in New York in 1787, have not been reported in colonial American excavations or hoards since most which arrived here were likely returned to England by speculators, perhaps the same people who imported the raps. Thus the New York Act of April 20, 1787 designed to regulate and improve the circulation of coppers actually encouraged the exportation of acceptable regal halfpence and increased the ratio of "Birminghams" to genuine coppers in circulation, up to 95% according to one account.

The lack of Congressional intervention was criticized since the authorities hoped that the Fugio coinage would terminate this problem, when actually this Congressional issue was due for its own disaster which will be subsequently recalled. It was suggested that if the public were faced with "a large influx of ... base coins of gold and silver" that it would be a "dreadful situation ... without ... an immediate interposition by some authority." (1) But since copper was not a coin of intrinsic value as were gold and silver, it was "little regarded; hence in the last, the public are liable to great impositions." (2)

Numerous solutions were proposed in the press to end the copper panic. One approach suggested that market forces would determine in the long run how many coppers the public would accept for a shilling (3). A more immediate answer was for the Philadelphia Common Council to recommend a rate of 48 to the shilling as had happened in New York (4). These rates would not be equivalent due to the inequality in the moneys of account between the two cities, 48 coppers in New York being on par with 45 in Philadelphia, and 48 in the latter equal to 51 in the former. It was emphasized that such suggestions could just be recommendations since only Congress could now regulate the currency. In addition to this devaluation, it was urged that all counterfeits be rejected, commenting that a child of three could soon learn to tell the difference between genuine and false coppers. A more radical proposal from Philadelphia advanced the recommendation of 96 coppers to the shilling (5), and one New York merchant advertised that he would accept 60 to the shilling or 10 d. per pound (6).

1. "Respecting Coppers".
2. Federal Gazette, Vol. II #106, August 1, 1789.
3. ditto
4. Federal Gazette, Vol. II #112, August 8, 1789.
5. Federal Gazette, Vol. II, #107, August 3, 1789.
6. The Daily Advertiser (New York), Vol. V, #1381 to 1386, July 24 through 30, 1789. Sixty coppers per New York shilling equals 50 per pound at 10 d.

One published treatise on copper urged that copper never should acquire legal tender status nor should a creditor be obliged to receive even partial payment of a debt in copper (1). The logic advanced for this pronouncement included the financial loss which would be incurred since copper passed at a rate greater than its intrinsic value. It was also argued that due to the weight and bulk of a large payment of copper, there would be significant transportation and storage problems. For example, if one were required to accept only 5% of a \$10,000 debt in copper, the payment would weigh 1180 pounds. This writer also emphasized the relatively greater expense to mint copper coins as compared to gold and silver, and that the final result would be a greater quantity of copper in circulation than would be necessary for small change. A compromise proposal would be a billon coinage of half copper and silver so that the coin would be physically large enough and yet have intrinsic value so that creditor would not lose out. Congress eventually heeded the ideas advanced in this treatise since copper coinage from the Federal mint never became legal tender, and in fact, half cents were rejected as currency by the public in 1811 (2). The billon coinage, as well as a later idea to insert a silver plug in copper coins to augment intrinsic value never came to fruition (3).

Some less serious ideas were tendered to cope with the surplus of coppers including their consumption in the manufacture of sleigh bells which were to be required of all horses in Philadelphia to prevent pedestrian accidents (4). The Philadelphia Common Council interrupted their solemn discussion of the copper problem when some members proposed that the excess coppers could be exchanged for tea or used in the manufacture of frying pan bottoms, and copper buttons (5).

Mr. E. ... then proposed, that the coppers be immediately sent to Botany Bay, and exchanged for the best Hyson and Tonkay teas.

Mr. L. said, the proposal was a good one, ... whenever the first ship-load is gone, they (coppers) will immediately flow in upon us from the other states, and at that rate we may ship them (coppers) off to eternity.

Mr. S., an able statesman and renowned politician ... moved that it be recommended to the good people of the United States, to convert into (buttons) the coppers now in circulation; thus ... computing the number of souls in North America at 2,000,000, and allowing each person twenty-four buttons, the whole will amount to 48,000,000, a number far exceeding the coppers in circulation; the importation of frying pan bottoms from Britain would then cease, our manufacturers would be encouraged, our wisdom and economy would astonish the world.

The question was moved and defeated.

1. Penna. Mercury, #424, July 30, 1789.
2. Comprehensive Catalogue, 54.
3. R. S. Yeoman, A Guide Book of United States Coins (Racine, 1983), 37th edition, 8.
4. Federal Gazette, Vol. II, #106, August 1, 1789.
5. Independent Gazette, Vol. VIII, #1135, August 1, 1789

Satirical comments regarding the copper panic were not limited to the Philadelphia Common Council chambers or the editorial page of the newspapers as recorded in the following poems:

The Complaint of a Copper (1)

Long have I been the slave of man;
I do to please him all I can.
From hand to hand I love to pass,
And none accuses me of brass.
A foreigner I am, 'tis true;
But what is that to him or you ?
A stranger, serving the community,
With natives ought to live in unity.
Perhaps, to serve some views of state,
I suffer scandal from the great;
Perhaps some mercenary knave
Against my worth pretend to rave.
Swindler, to gain their private ends,
Will sacrifice their worthy friends.
Because a few vile interlopers
Have got amongst us honest coppers,
Must fear to flame consign us all
In every shop, at every stall ?
The villain truly was satanic,
Who first began this cruel panic (2).
And should the horror widely spread,
The child shall cry in vain for bread.
Too often mad infatuations
Will run like wildfire, through a nation.
But, though this satire may be true,
What harm, alas ! can Coppers do ?
Trifles at most, we serve for change;
Then far and wide pray let us range.
If not imprison'd in the state,
We soon will ease you of our weight;
But since a bad name thus you give us,
No other land will e'er receive us.
Treat us no worse than we deserve,
If we must suffer, you may starve !

*

1. Federal Gazette, Vol. II, #106, August 1, 1789.
2. Of interest, this is the only contemporary reference found which calls the collapse of coppers a "panic."

The Coppers Done Over (1)

Of all the late hubbubs urg'd on, by foot-cloven,
 From shop board to office, from tap room to oven,
 From college to brothel --- could hell e'en discover,
 More wicked a whim, than we Coppers done over ?
 Done over, o.

Our nominal value for ages pass'd muster,
 With 'squire, brewer, baker, punk, bailiff and huckster;
 But 80 a shilling, 'twixt butcher and drover,
 Must prove, that poor Coppers are sadly done over, &c.

Kite-faced bills of credit, altho' they did wonders,
 Fell not half so fast into b-mf dd-r [sic] flounders;
 Perhaps they'll yet start from this vault into clover,
 To ouster us Coppers, thus flatly done over, &c.

Were Swift sent from Styx, with political caution,
 To sing wooden half-pence again, out of fashion:
 'T would not cause such fuss, between London and Dover,
 As here, in Columbia, poor Coppers done over, &c. (2)

Had we and slut Conty, who dropt long before us,
 Still kept with the wealthy, they'd prize and adore us;
 But catch'd in hands needy, we feel her false lover
 Repeat his fell stab, on us Coppers done over, &c.

Beware gold and silver your fate seems precarious,
 The mediums of trade, are so jadish and various;
 Keep clear of the poor, or be sure under cover,
 Some speck shall condemn you, like Coppers done over, &c.

Ye minting brass founders, now, now is your harvest,
 For fresh speculations, lo! Satan, thou carvest,
 "Till ev'ry oppressor, and spect-money rover,
 Shall weigh'd be like Coppers, and smartly done over, &c.

1. Independent Gazette, Vol. VIII, #1138, August 5, 1789. Some words are unclear due to broken type in the original. The phrase "done over" has the connotation, defeated or finished. Another poem in similar style "The Farmer not Done Over", also appeared (The Norwich Packet and the Country Journal (Connecticut), Vol. XVI, #801, July 31, 1789).

2. Another reference to Wood's coinages.

COPPERS PANIC

Away, now, ye beggars, and small-ware retailers,
 Go, all suck your paws, through our downfal and failures;
 Else, lay siege to Heaven --- your pray'rs may recover
 The death of the D-----I [sic], and Coppers done over, &c.
 Done over, o.

*

It is probable that those whom the devaluation of copper affected the most, namely the poor and the smaller merchants, did not see much levity in the situation or appreciate the jokes poked at their misfortune. Such is the tone of a letter written to the editor of The Federal Gazette (1).

Mr. Brown.

It is really laughable to hear the different opinions offered about the copper coin.

But to be serious, I would advise the Corporation of the large trading cities to endeavor to come to some agreement about the rate at which coppers shall be received in payments as change, at least such of them as appear to be good copper.

This was essentially the course that many cities adopted. The New York Common Council recommended a rate of 48 coppers to the shilling on July 21, 1789, an action also taken by Albany four days later (2). Philadelphia refused to take a position but deferred to a rate set by market forces since they recognized they had no right to act under the new Constitution. By September 5, 1789 the exchange rate for New Jersey coppers in New York had improved to 24 per shilling, which were the only authorized coppers to circulate in the state (3). New Jersey coppers were preferentially received since they enjoyed a legal tender status in their home state for the payment of taxes.

The action which seemed the most decisive in curtailing the copper panic was taken by the Bank of North America in Philadelphia who on August 6, 1789, issued paper tickets in denominations of \$ 3/90, or 3 d. specie, and \$ 1/90, or 1 d. specie. The justification for this emission of paper money "has been taken merely for the publick convenience at the juncture when the Circulation of Copper Coin is nearly suspended" (4) This initiative was well received as evidenced by a notice thanking the Bank for the "tickets" at this time "when the copper coin is in continual fluctuation." (5) In March 1790, the New York City likewise issued small change notes of 1 d., 2 d. and 3 d., a practice soon to be copied by other municipalities and individuals (6).

1. Vol. II, #106, August 1, 1789.
2. Newman, "Bungtown Halfpence", 145.
3. Douglas, "James Jarvis", 290-291.
4. Federal Gazette, Vol. II, #114, August 11, 1789.
5. Federal Gazette, Vol. II #115, August 12, 1789.
6. Douglas, "James Jarvis", 291.

There is a subplot in the story of the Coppers Panic of 1789 involving the Fugio cents. This coinage had been established by Congress on August 8, 1786, complying with a standard of 157.5 grains per coin and designed to pass at 100 to the Spanish milled dollar. This was an attempt to replace the hodgepodge of circulating coppers but only the Massachusetts mint adopted the same standard. The New York Act of April 20, 1787, which depreciated the copper exchange rate in that state to 20 per shilling, thereby would have reduced the Fugio cents from the Federal standard of 100 per dollar to 62.5 cents per dollar for coins circulating in that jurisdiction (1). There was little respect in New York for the Federal standard or Fugio cents, for that matter, since these coins carried no inherent legal tender status or provision for redemption. Because of this unfavorable economic climate, these newly minted Fugios which were delivered to the Treasury by James Jarvis in May 1788 were held out of circulation. Massachusetts, the only area where the Fugios and the indigenous state coppers would have been at par and at the same standard, would have been a logical place to have released the new Federal coins. An August 1, 1789 report from Boston suggests that this action may have been considered but the option was never pursued (2). Instead the Fugio cents were sold in bulk in New York to a speculator, Royal Flint, in June 1789, who could not dispose of his new purchases by the time the Coppers Panic struck later that summer (3). At the rate recommended by the New York Common Council, 100 Fugios could be expected to receive 26¢ ! Unopened kegs of the unnegotiable Fugio cents came into the possession of the Bank of New York, a story already narrated.

There was a blueprint developed in May 1788 to increase the Federal standard to 210 grains, whereby the Fugio cent would have circulated as three-quarters cent (4). Nothing ever came of this proposal which would have brought the token value of the Fugios more into line with their intrinsic value and discouraged the currency of counterfeits. This positive action could have bolstered public confidence in coppers to the extent that the subsequent collapse could have been moderated or even averted. Congress, both under the Confederation and new Constitution, really ignored this problem of an inadequate copper medium for many months and took no action despite indications of a developing crisis. Although the Federal government was occupied with more important issues, an interest on its part may have prevented this calamity which injured those dependent on small change, a opinion supported by many of the editorialists of the era.

1. Douglas, "James Jarvis", 289; Kessler, The Fugio Cents, 5.
2. Douglas, "James Jarvis", 290.
3. If the Fugio cents still had the legal tender status as provided for "copper coin struck under the Authority of the United States" in the legislation of October 16, 1786, "Ordinance for the Establishment of the Mint of the United States," it is inconceivable that the government would have dumped them in such a manner (Douglas, "James Jarvis", (original manuscript) note 182). Had they been receivable for taxes, the Fugios would have had the same status as the New Jersey coppers.
4. Douglas, "James Jarvis", 285; Taxay, The U.S. Mint and Coinage, 26-38.

Another interesting coin of the period is the local New York copper from William and John Mott, minted in 1789, a time, of course, when coppers were becoming unpopular. This first American trade token comes on two weights of planchet, a light one slightly over 100 grains and a heavier one from 164 to 233 grains (vide infra). It can be speculated that the heavier coin was a purposeful action to produce a token of more acceptable intrinsic value and thereby assure popular approval at a time when the circulation of coppers was becoming sluggish and eventually ceased. The heavier planchet is compatible with the proposed increase in the Federal standard to 210 grains which never survived the legislative process.

A contemporary account of life during the Coppers Panic is provided in the diary of Samuel Davis who recorded his trip from Plymouth, Massachusetts to New York City and return during the autumn of 1789 (1). Stopping in New Haven on September 3, 1789, the diarist encountered difficulty in making change since all coppers including "AUCTORI CONN." passed at 72 to the shilling. Davis was "chagrined that old Massachusetts, with his bow and arrow, should be undervalued." The traveler commented,

New York regulates their (Connecticut) trade ... (2).

The crown passes there (New Haven), and here (Massachusetts) now at 6 s. 9 d. ... (3).

September 17, 1789 (New York). Coppers pass at twenty-four the shilling. Only the Jersey coinage are current in the market, where are melons, peaches, and other fruits, superior, I think, to these of Boston. ...

September 21, 1789 (Long Island Sound). Coppers seventy-two the shilling at the ferry. ...

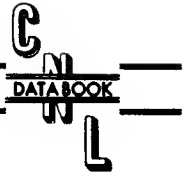
September 24 1789 (Voluntown, Connecticut - on the Rhode Island border). Coppers pass at forty-eight the shilling, to those going east, as they pass thus at Providence (Rhode Island).

This contemporary report confirms that the Coppers Panic which hit New York hard in July, began to slacken by early September and provides further evidence that after September 5, 1789, only New Jersey coppers were acceptable in New York at a rate of 24 to the shilling. In Connecticut, the circulation of coppers, including those of Connecticut and Massachusetts, still stagnated at a deflated rate of 72 to the shilling. Mr. Davis was appropriately "chagrined" that at an exchange rate which would require 432

1. Samuel Davis, "Journal of a Tour to Connecticut - Autumn of 1789", Massachusetts Historical Society, Proceedings (1869-1870), 9-12, quotes *passim*.

2. Recall that Connecticut never set an exchange rate for coppers.

3. English and French crowns should have passed at 6 s. 8 d. local money in New England and Virginia and for 8 s. 9 d. in New York money of account (Schilke and Solomon, America's Foreign Coins, 16



Massachusetts cents to the dollar, or about half their intrinsic value (1)! There must have been a complete lack of public faith in coppers to have sustained this ludicrous devaluation of superior quality coppers. The traveler does not comment on the exchange rate in Massachusetts but infers a rate of 48 to the shilling in Rhode Island.

The extent and severity of the Coppers Panic along the Eastern seaboard cannot be determined with accuracy. "The real injury lay in the unrestricted volume [of coppers], which was aggravated by the concentration in certain cities." (2) It did involve Pennsylvania, New Jersey, New York, and Connecticut, where it seemed to have lingered longer, and to a lesser extent Rhode Island. The initial notice of the action of the New York Common Council and subsequent news releases were repeated as far south as Pennsylvania, all through Connecticut, north into Boston but not into New Hampshire, which was still in the grips of a severe depression. The event was not mentioned by Felt in An Historical Account of Massachusetts Currency, a chronicle of all significant events in the Bay State's monetary history. This is not to say that Puritanical New Englanders were not interested in money matters. Another news story about money matters, dateline Providence, July 16, 1789, reporting the discovery of counterfeit 1781 dollars, was widely circulated within Connecticut, Massachusetts, and New Hampshire. This suggests that the devaluation of coppers was not a newsworthy item in areas away from the economic sphere of influence of metropolitan Philadelphia and New York, the center of the panic. Local newspaper accounts relate that Massachusetts also had a large proportion of counterfeit coppers in circulation (3), as well as an assortment of European copper coins (4). However, it can be speculated that the difference between Boston and New York is that the Bay Staters had confidence in the quality of their well-regarded Massachusetts state coinage, which by then was in circulation and brought a stability to the small change medium. Thus the collapse did not spread into Boston area, although there could have been some fluctuation in the exchange rate. Any significant devaluation in Massachusetts would certainly have attracted the attention of the local press, diarist Davis, or Felt. Rhode Island did have an increase in the exchange rate, as noted by Davis, which did not approach the degree seen in Connecticut. The conclusion that Massachusetts coppers stabilized the medium locally is not an unreasonable one to assume since in New York, in September 1789, when only New Jersey coppers were accepted, the exchange rate rapidly fell from 48 to 24. The apparent reason is that the public had regained partial confidence in New Jersey coinage which had a legal tender basis and was more consistent in quality than the alternative counterfeits. Finally, after repeated urgings, the citizens of New York gathered sufficient courage to reject all coppers, other than the New Jerseys, having been so recently injured by the

1. The Connecticut shilling passed for six to the dollar, therefore, 432 Mass. ¢ / 44.4 Mass. ¢ per pound copper x 14.7 d. per pound = 143 d. = \$1.99. This \$1.99 was the intrinsic value of copper to pass at \$ 1.
2. Carothers, Fractional Money, 44.
3. Mass. Spy, Vol. XVI, #780, March 16, 1789.
4. Newman, "Bungtown Halfpence", 148.

lightweight Birminghams. Massachusetts throughout this period always had a reliable copper coinage of its own to depend upon and for that reason it can be postulated that no widespread devaluation occurred.

One outcome from the Coppers Panic of 1789 was sure; all previous governmental attempts to regulate the circulation of coppers failed and now the public looked to the Federal government for a permanent solution to the problem of an unstable copper medium under the authority of the new Constitution. The Coppers Panic should have come as no surprise to anyone since it had been brewing for years. Minor riots occurred in Philadelphia in 1741 and New York in 1753, already been recounted, but nothing of any lasting significance. All the enabling legislation which had established the state mints, spoke of the base coppers in circulation and the need for a better copper coinage. However, when such a proposal came to the New York Legislature to mint state coppers, it was rejected in favor of an action to devalue the existing medium. A legislative committee report was issued alleging the enormous profits made from minting copper token coinage; and their Congressional delegation lobbied for an increase in the Federal standard. The bubble finally broke in the summer of 1789, when the circulation of coppers from Connecticut to Pennsylvania virtually ceased.

The question asked in the preface of this book can now be answered. Why did the state coinages only last from 1785 to 1788 ? There are several answers. The most obvious is that under the Constitution, states could no longer mint coins, print paper money, or regulate currency. The next reason is that state coppers were a failure in bringing stability to the copper medium. While the Massachusetts coppers were certainly better than most, that mint was very expensive to operate. It is questionable whether it would have continued anyway, even without a Constitutional prohibition. The domestic copper coinage collapsed because the medium was far larger than required for commerce, it was saturated with counterfeit English halfpence, and citizens lost faith in this token coinage. Since the public did not actively discriminate what they would accept, all coppers were viewed with suspicion, even "old Massachusetts, with his bow and arrow," and the entire medium collapsed. In his inventory of the Stepney, Connecticut, hoard consisting of some 200 pieces, Breen listed 72 counterfeit halfpence, of which sixteen were imitation halfpence attributed to Machin's Mill. From this sample it is evident that many of the halfpence which discredited the copper medium were from the Newburgh mint. From a numismatic viewpoint, it is surprising that so little attention is paid to the most prevalent copper coin circulating in America during Colonial and Confederation times, namely the counterfeit English halfpence. Both the domestic counterfeit halfpence and the imported Birminghams are very important coins in our numismatic legacy and deserve equal consideration. Other coppers which are documented as having circulated in America and formed a substantial portion of the small change medium should be added to this list, such as the genuine English halfpence and the regal and counterfeit Irish halfpence.

This numismatic history continues as the events leading up to the development of this new Constitution and subsequent founding of the Federal Mint are recounted.

TOWARDS A STRONGER UNION

A recurrent thesis of this book is that a full appreciation of numismatics requires a knowledge of contemporary historical events, particularly those which governed the issuance of the coinage under study. It has been the attempt of the author to link the moneys of the Colonial, Revolutionary, and Confederation periods with the historic and economic occurrences of the respective eras.

Now we are approaching the end of the Confederation period at a time where the new union still lacks uniform exchange rates between the states, the country depends on diverse foreign specie for currency, both the state and Federal governments have the power to regulate and produce money, and there has been a failure of the circulating token copper medium. The Confederation was just edging out of a disastrous post-war depression but lacked direction and unanimity. The story continues as we examine just how this challenge was addressed.

In an attempt to respond to some of these outstanding problems of the day, a meeting was convened in Annapolis, Maryland, on September 11, 1786 to examine the trade regulations between the various states. It was all too evident that the Articles of Confederation were unable to cope with the current trade and economic crises and the need for their revision was obvious. "...Congress was doing little more than performing the function of a stately debating society." (1) A second meeting was planned for May 1787 to propose amendments to the Articles of Confederation to make them "adequate to the exigencies of the government, and the preservation of the Union" and report back to Congress (2). The country was still in a deep depression, seven states had resorted to "rag money," a negative trade balance continued, hard money had all but disappeared, and experiments in copper coinage were destined for failure. Shay's Rebellion, which had occurred through the summer of 1786 and into the early months of 1787, was fresh in everyone's memory, and more than any single event since the Revolution, drove home the need for a stronger national government (3). Although some historians suggest that too much emphasis has been placed on this "organized resistance to the collection of personal debts" (4), others suggest that it was one of the major events catalyzing the Constitutional Convention of 1787, in addition to calming the paper money craze all over the nation (5). Jensen

1. Andrew Cunningham McLaughlin, The Confederation and the Constitution, from Albert Bushnell Hart, editor, The American Nation: A History (New York, 1905), Vol. 10, 81.
2. Alexander H. Stephens, A Comprehensive and Popular History of the United States (Philadelphia, 1882), 277.
3. Hawke, The Colonial Experience, 667.
4. Stephens, A Comprehensive and Popular History of the United States, 274.
5. Nevins, The American States During and After the Revolution, 537.

postulated that Shay's Rebellion and its potential for civil unrest frightened George Washington out of retirement and into politics (1).

The convention scheduled for May 1787 disregarded previous instructions. Rather than revising the existing Articles, it set to the task of framing an entirely new constitution. This new document significantly limited the powers of the individual states and vested additional authority within the Federal government. Congress was to become financially independent of the state legislatures since it was to be empowered to tax directly. Only the Federal government would have the power to issue bills of credit, mint coins, and regulate their value.

On September 17, 1787, the entirely new constitution was finished and approved by the Convention. It now had to be ratified by the several state legislatures. Felt writes of its reception in Massachusetts. "It is regarded by the friends of order and rational freedom, as essential to endow the National Administration with power sufficient to repair and regulate the system of the currency."(2)

Support for this new constitution by far was not unanimous. Proponents urged its acceptance in a collection of essays titled The Federalist written by such advocates as Alexander Hamilton, John Jay, and James Madison. This commentary stressed the need for the Federal government to be the only jurisdiction with the authority to coin money and regulate its value. In regard to state mints, the author of The Federalist continues, "... a right of coinage in the particular states could have no other effect than to multiply expensive mints and diversify the forms and weights of the circulating pieces."(3) This indeed had been the experience of the state mints under the Articles of Confederation. The Federalist concludes, "The extension of the prohibition to bills of credit must give pleasure to every citizen ... and that all currencies must be managed at the Federal level."(4)

Those several state legislators who had supported paper money during 1785 and 1786 were the very ones who opposed the ratification of the new constitution when it was submitted to their respective assemblies (5). In Maryland, voters were urged to send only those members to the ratifying convention who supported the new constitution since it was argued that those who favored paper money and the debtor bill "did not want an orderly government, but a chaotic one where they would be free to speculate."(6)

Less than ten months after the Constitution was reported out of the

1. Jensen, The New Nation, 250.
2. Felt, Mass. Currency, 205.
3. The Federalist, No. XLII (by James Madison), from The Federalist; A Commentary of the Constitution of the United States, edited by Henry Cabot Lodge (New York, 1908), 264.
4. The Federalist, No. XLIV (by James Madison), 278.
5. Bullock, Essays, 76, 198-199, 273; Sumner, American Currency, 52-53.
6. Behrens, Paper Money in Maryland 1727-1789, 86-87.

Convention, it was ratified by the ninth state, New Hampshire, and became the new order of the land on June 21, 1788. It has been proposed

... that economic deprivation was the major issue in the campaign for ratification of the Constitution. Because of the depression and its unwanted effects of a collapsing economy, a shortage of money and burdensome debts and taxes, the people accepted the United States Constitution as a means that seemed to promise a way out of their troubles (1).

In his book, An Economic Interpretation of the Constitution of the United States, Charles A. Beard developed the argument that the Constitution was written and directed by those leaders who were personally interested in, and derived economic advantages from this new system of government (2). He concluded that there were large and important economic interests who were adversely affected by the government under the Articles of Confederation, including the largely still unpaid obligations of the Revolutionary War. This theory is refuted at least in Virginia, where it has been shown that the leaders of the factions, both supporting and opposing the new Constitution, were from the same socio-economic group of the landed aristocracy (3). No matter how compelling Beard's thesis regarding the motivation of the framers of the Constitution of 1787, this document has withstood tests of time.

The first Federal elections were held on January 7, 1789, and George Washington was inaugurated on April 30. Both North Carolina and Rhode Island had not yet ratified the Constitution and remained outside the government, an action quite consistent with their paper money and inflationist policies. When Congressional action on the Bill of Rights was in progress, North Carolina approved the Constitution in November 1789, followed by Rhode Island in May of the following year.

In his first message to Congress, President Washington urged "Uniformity in currency" It was not until April 2, 1792 when legislation finally was passed which established a Federal mint (4). Under this law, copper was still to remain a token coinage while gold and silver were to be minted and circulated at a bimetallic standard ratio of fifteen to one. Foreign specie was to remain legal tender with Spanish silver retaining its position of eminence in the national currency until finally demonetized in 1857. The new Federal standard for copper was indeed increased to a significant 264 grains for cents and 132 grains for half cents, an action doubtlessly viewed with great favor by the New York legislature which had campaigned unsuccessfully for a change under the old Articles of Confederation (5). On May 8, 1792,

1. Flannagan, "Trying Times", 3-4 (dissertation abstract).
2. (New York, 1935).
3. Robert E. Thomas, "Virginia Convention of 1788; A Criticism of Beard's An Economic Interpretation of the Constitution", Journal of Southern History Vol. 19, (1953) 63-72.
4. Schilke and Solomon, America's Foreign Coins, 17 and passim.
5. Taxay, Comprehensive Catalogue, 54.

Congress determined "that no copper coins except cents and half cents, shall be current"; of this event Felt reminisces (1),

... thus the pennies, half-pennies, and farthings, dear to the early associations of many yet alive, and bearing the representation of Britannia and their Majesties, as well as other coins of several states, are placed under the ban of legislative authority. Now and then the remains of them have come forth and passed for a season, till driven back by new regulations

This demonetization of "foreign and privately made coppers" was to occur after "the emission of \$50,000 in cents and half cents from the mint." This provision was neglected and the same "motley coppers (including tokens and counterfeits) continued to circulate for decades." (2) By 1795, and probably earlier, the exchange rates for coppers had returned to the values as reported in Tables IX and X. At this time, however, the value of this token coinage was also expressed in terms of Federal currency at a value of 9.25 mills each (3). Under the new Federal system, confidence in coppers returned and coppers again circulated. Of interest, as the price of copper increased, the standard had to be reduced lest copper coins be melted and traded as a metal (4). "The unauthorized copper pieces gradually disappeared without loss to the holders, since copper was much needed for industrial purposes." (5) This was a reversal from the situation of 1789 when coppers practically could not be given away.

The copper coinage of the Confederation period had failed and the Federal mint, born of necessity, was now a reality. "The halcyon days for coiners of copper were at an end and were never to return." (6) The struggle for a uniform national currency which had started in the early days of colonialism was now in its last phase, but America would not be independent of all foreign currency until all such money was finally demonetized. The Act of February 21, 1857 brought about the "Termination of the long checkered history of the sanction of foreign coins as legal tender in this country." (7) At long last the American Colonies, now the United States, could finally boast their own coinage! A colorful, formative phase of numismatic history is now at an end, while another is just beginning.

1. Felt, Mass. Currency, 210.
2. Taxay, Comprehensive Catalogue, 54.
3. Joseph Chaplin, The Trader's Best Companion (Newburyport [Mass.], 1795), 34, 35.
4. This first reduction was to 208 grains on January 14, 1793 and subsequently to 168 grains on December 27, 1795. None of the 264 grain coppers were ever minted before the standard was reduced. (See Barnsley, "Authorized Weights", CNL, 9).
5. Carothers, Fractional Money, 71-72. See also Newman, Colonial Virginia, 36.
6. Douglas, "James Jarvis", 291.
7. Schilke and Solomon, America's Foreign Coins, 59.

CONVERSION INTO VARIOUS MONEYS OF ACCOUNT

Because of unequal exchange rates between the standard Spanish milled dollar and local currencies, it was necessary for Americans of the Colonial and Confederation periods to consult printed tables to determine the value of specific specie coins in the various moneys of account. Some of these tables are reproduced by Schilke and Solomon in America's Foreign Coins (1), and by Solomon in "Foreign Specie Coins" (2) and will not be repeated here. Contemporary publications such as The Philadelphia Directory, The New York Directory, Gaine's Universal Register, and Joseph Chaplin's, The Trader's Best Companion aided the early merchant in these currency calculations. The exchange rates differed from place to place based on the relative strength of the local economies and were relatively stable but with episodic fluctuations. McCusker (3) has published an exhaustive study of these rates so that the reader can find the prevailing rate at any time during the period 1660 to 1775 for any of the major world markets for which records are extant.

Tabulated below are the relative exchange rates between the states and England published from 1785 to 1787 as researched by Schilke and Solomon from data printed in the three contemporary resources listed above.

Locality	Value of Spanish milled dollar in local moneys of account
England	54 d. (sterling)
South Carolina, Georgia	56 d.
New England, Virginia	72 d.
New Jersey, Pennsylvania, Maryland, Delaware	90 d.
New York, North Carolina	96 d.

A simple proportion formula can now convert from one currency to another. As an example, copper halfpence passed in England at 24 to the shilling, how many such halfpence would pass for a local New York shilling so that the relative values would remain equal ?

$$\begin{array}{lcl} \text{English standard} & / & \text{New York standard} \times \text{sterling amount} = \text{New York money} \\ \text{Thus:} & 54 \text{ d.} / 96 \text{ d.} & \times 24 \text{ halfpence} = 13.5 \text{ halfpence} \end{array}$$

Hence at 14 halfpence to the New York shilling prior to August 1, 1787, these coppers were slightly undervalued in terms of sterling.

1. 10-23.
2. 35,39,41.
3. Money and Exchange, passim.

To convert from an American value to sterling, the formula would read

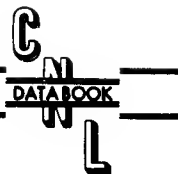
$(\text{State standard} / \text{English standard}) \times \text{State amount} = \text{Sterling value}$

For example, The average weight of five very fine grade Chalmers' shillings is 55.1 grains, whereas an English shilling weighs 92.6 grains.

Is the silver content of a Chalmers' comparable to an English shilling ?

Thus: $90 \text{ d.} / 54 \text{ d.} \times 55.1 \text{ grains} = 91.8 \text{ grains}$

This value is less than 0.9 % off the expected and so John Chalmers certainly gave his customers full value in his coinage. The exact weight requirement for a Chalmers' shilling would be calculated at 55.6 grains.



SUMMARY OF OVERSTRUCK COPPERS

Frequent mention has been made in this book of the economic advantage from overstriking existing coppers to give them a new identity. Appendix II catalogues all known state coppers overstruck on host coins in an attempt to understand better the pattern of this practice which was not as haphazard as it might appear at first glance.

Table I lists the Vermont coppers overstruck on host coins. The Rupert mint used Constellatio Nova coppers as planchets for three of its four 1787 issues, the exception being R.R.- 34, B. 10-J, for which only three specimens are known. It is easier to visualize this process of overstriking when the coins are studied according to their sequence of emission from the mint as indicated by the new Bressett nomenclature (1). Hence, there are none for 10-J, occasional for 10-K, frequent for 11-K and always for 12-K and none thereafter for the 1788 dies. It looks as though what started as an experiment became a practice and was then discontinued with the arrival of new dies. The R.R.- 3 over a Connecticut and the R.R.-15 on the landscape R.R.-4 sound to be interesting accidents with no pattern or logic.

After mid-1787, Vermont coppers were simultaneously minted at Machin's Mill after the two mints entered into a business arrangement. The Newburgh operation used Irish halfpence dated 1781 and 1782 as planchets for six of their products but weight analysis shows at least some of the host coins to be counterfeit. There is also a pattern to these emissions as described by Bressett.

After July 1787 until 1788, the Machin's Mill coppers were those muled with, or similar to the imitation halfpence, viz. R.R.-13 and -27, B. 17-V and 18-W. These two Vermonts and all the imitation halfpence appear on original planchets, with a solitary exception recorded in Table IV. Those Vermont coppers minted in 1788 and 1789, with the three exceptions of R.R.-24, B. 16-S, the last issues of R.R.-25, B. 16-U, and the last use of R.R.-29, B. 22-U, may appear over Irish halfpence. But why were no imitation halfpence struck on host coins? It is possible that those issues had ceased production by that time rather than for any aesthetic motives of the mint master. Hence the pattern is established that the overstriking at Machin's Mill on Irish halfpence occurred for a short period in 1788 and into 1789 usually with dies that failed early since there are so many rarities in this group. A practical reason why these dies failed early could have been due to the fact that the host coins were not annealed or softened prior to overstriking. Thus this copper was "too work-hardened to readily take the new image, and ... [it] would also have been especially hard on the dies, and might have contributed to early failure." (2) On the contrary, the New

1. "Vermont Copper Coinages", *passim*.
2. James C. Spilman personal communication, March 26, 1986.

Jersey Maris 56-n coinage was so prolific and contained so many overstrikes that it suggests a different and more sophisticated process which preserved the longevity of the dies. The last overstruck copper must have been 16-U, R.R.- 25, since further use of the "U" reverse is not associated with Irish halfpence and the 16 obverse with the "horned bust" die break is then wedded to the old Rupert "S" reverse to produce the common R.R.- 24 or B. 16-S. The remainder of the Machin's Mill Vermont coinage into 1789 and 1790 consist of "muled, worn, or rejected dies", all on original but frequently defective planchets. In summary it appears that the Rupert mint in 1787 used Constellatio Nova undertypes, first occasionally, and then exclusively. The practice abruptly stopped for the 1788 issues. During parts of 1788 and 1789, the Machin's Mill coinages are extant on (probable) counterfeit Irish halfpence for six emissions and then this practice suddenly stops with R.R.- 24, B. 16-S. It is not revived again despite the continuous deterioration in the quality of the coinages from Newburgh. This would suggest that the supply of Irish halfpence was exhausted. One consistent feature of these Vermont coppers is that each mint employed just one kind of host coin, the Rupert mint using the Constellatio Nova coppers and Captain Machin, the Irish halfpence, for which many counterfeits were known to have existed (1). The factor of this consistency will be addressed again.

Table II shows the occurrence of two reported 1787 Connecticut overstrikes which does not indicate a trend but probably just a extraordinary event at the Jarvis and Company mint. There are so many 1787 Miller 33 coppers that certainly more overstruck issues would have surfaced if overstriking had been a motive of that mint. The 1788 Connecticut coppers which appear overstruck on Constellatio Nova coppers are the Mailed Bust Right coppers by Atlee, which bear great resemblance to their Vermont and imitation halfpence cousins, and the Triple Leaves busts by Buell. The 1788 Draped Bust Left Connecticut, 16.3-N, may rarely be seen over a counterfeit Massachusetts cent. A review of Spilman's Die Analysis Chart places these coins in a distinct grouping (2), some of which are doubtlessly from Machin's Mill (3).

Trudgen presents a chronology of the Machin's Mill output and notes that both the Vermont and Connecticut series were minted from mid-1788 into late 1789, overlapping by a few months from mid-1789 with the New Jersey Maris 56 to 58-n "camel heads." (4) It seems curious that Captain Machin would have reserved the Constellatio Nova host coins for the Connecticut series, the counterfeit Irish halfpence exclusively for his Vermont coppers, while impressing the New Jersey coins over every type and description of lightweight coppers current in that period, including some of his own products. This was also accomplished without any apparent mixing of host coin "planchets." In addition, the Connecticut and New Jersey coinages would have been simultaneous with the last Vermont emissions from 1789 and 1790

1. Batty, Descriptive Catalogue, Vol. 3, 1023-1047.
2. CNL, 577.
3. E.A.C., 44.
4. "Machin's Mill", 871.

which do not appear overstruck. How could all these various activities and styles of production have occurred within the same mint?

One sure fact is that the Vermont coppers came from Newburgh at that time. Since it seems unlikely that an illegal mint would have remained so fastidious in the way that "blanks" were fed into the presses there must be another explanation for the distinct host coin "personalities" of the 1788 Connecticut and "camel head" New Jersey coppers if they were to have originated at Machin's Mill at the same time. An unlikely explanation would be an excellent quality control program at the mint which kept all the host coins isolated from each other. In modern times, batches of planchets may become mixed up and fed into the wrong presses. I find it difficult to conceive that the Vermont series, the "camel heads", and the 1788 Connecticut overstruck on Constellatio Nova coppers came from the same mint at the same time. The most logical answer is that the three minting operations were separated from each other, either in time or place. Such an explanation is quite plausible for the "camel head" series which appears on host coins similar to the practice of the Elizabethtown mint. It is my opinion that the Maris 56 to 58-n came from that location even though Atlee engraved the dies. The two series that used Constellatio Nova coppers, 1787 Vermont and the 1788 Connecticut coppers, were minted at different times and certainly not both at Rupert.

Now this argument becomes very weak in regard to the origin of the overstruck 1788 Mailed Bust Right Connecticut coppers since they are so characteristic of Machin's Mill, hence the separation must be in time and not place. The very rare 1788 Connecticut Draped Bust Left overstruck on the counterfeit Massachusetts cent, itself a possible Machin's Mill creation, bears similar features to other coppers which originated in Newburgh and stands within that grouping in Spilman's Die Analysis Chart. Since a genuine Massachusetts cent would have been heavier than the Connecticut standard, a minter would not have used a legitimate cent as host for a lighter coin. For the Triple Leaves over Constellatio Nova coppers, one could reasonably postulate a location other than Newburgh, such as the mysterious mint of Benjamin Buell, before he sold out to Captain Machin.

The New Jersey overstrikes are an entirely different situation as compared to the relatively uniform host coins of the Connecticut and Vermont. Table III reveals a disordered array of contemporary coppers with the notable exception of Massachusetts and Fugio cents, due to their greater intrinsic weight. Apparently anything lighter than the New Jersey standard was potential fodder for their presses. The motive for striking the Maris 34-V over the 34-J and 35-J is illusive, since the "V" reverse is inferior to the "J".

The overstruck New Jersey coppers fall into two major groups; the first being the Elizabethtown emissions from between June 1788 and June 1789. dies used were remnants from the old Rahway operation and the planchets anything lighter than the New Jersey standard which could be purchased, probably at significant discount since after July 20, 1787 nothing but New

Jersey coppers were negotiable in that state (1). It became profitable for the Elizabethtown minters to impress acceptable designs over any lighter coppers and pass them off on the unsuspecting. The second group of New Jersey overstrikes, the Maris 56 to 58-n, has already been mentioned. Breen (2) attributes this group to Machin's Mill whereas Anton (3) regards them as an Elizabethtown product. Because the host coin characteristics of these coppers is so different from the practices of the Newburgh mint, I would support the Elizabethtown hypothesis. If the "camel heads" came from Machin's Mill at the time indicated by Trudgen, they would have coincided chronologically with the Vermont series overstruck on counterfeit Irish halfpence or the last Vermont issues from old, rejected dies which were on original planchets. The only way that these New Jersey coppers could have come from Newburgh is if they were the last product of that mint, issued when all other operations had ceased.

These conclusions as to the mint of origin for those coppers overstruck over other coins are only speculative but are supported by examination of the style in which the host coins were used and the characteristics of the mint in question. Not only are the identities of these mints still shrouded in doubt, but there is still mystery regarding the origin of many other coppers, even with normal planchets. An accurate assignment of mints is difficult, but perhaps with advanced techniques, such as energy dispersive X-ray fluorescence spectrometry, there will be more reliable methods to study these undertypes and planchets (4). At any rate, speculation, controversy, and doubt serve us well if they spur us on to further research in this fascinating period of numismatic history!

1. Newman, "Bungtown Halfpence", 154.
2. CNL, 256.
3. "New Jersey", 499-501.
4. Harold A. Frey, S.A. Katz, Michael Pidotella, and Joseph Sowers, "'Fingerprinting' New Jersey Copper Coins by Energy Dispersive X-Ray Fluorescence Spectrometry", CNL, 713-719.

TABLE I

Vermont Overstruck Coins

Bressett Number	Ryder-Richardson Attribution	Host Coin and (Reference)
2-B	R.R.- 3	1785 Conn. Miller 4.1-F.4 (24).
9-I	R.R.- 15	1785 Vermont 3-C/RR-4 (19 p.6); George III halfpence, 1775 George III halfpence (39).
10-K	R.R.- 14	Occasionally on Constellatio Nova coppers (27); 1785 Nova (2 lot 564).
11-K	R.R.- 12	Nearly always on Constellatio Nova coppers (27); 1785 Constellatio Nova 4-D (15 lot 663), 5-E (p).
12-K	R.R.- 32	All on Constellatio Nova (27).
19-X	R.R.- 18	Usually on Irish halfpence (27); 1781 Irish 1/2d. (7 lot 11); 1782 Irish 1/2d. ? counterfeit (15 lot 685); Bræen (22) mentions British halfpence.
20-X	R.R.- 35	All on Irish halfpence (27).
21-Y	R.R.- 33	All on Irish halfpence (27); counterfeit George III English 1/2d. (3), (22).
21-U	R.R.- 28	Nearly always on Irish halfpence (27).
22-U	R.R.- 29	Occasionally on Irish halfpence (27).
16-U	R.R.- 25	All overstruck when dies removed to Newburgh (27), (2 lot 570), (26); 1781 counterfeit Irish 1/2d. (8 lot 304), (12 lot 89); 1781 Irish 1/2d. (15 lot 677).

TABLE II

Connecticut Overstruck Coins

Miller Attribution	Host Coin and (Reference)
1787	
33.38-gg.1	1783 Constellatio Nova 3-C (23).
33.20-Z.9	Scottish bawbee (23).
1788	
3-B.1	Breen (22) notes all are struck over Constellatio Novas; C. 4-C (13 lot 109); C. 4-D (p).
3-B.2 and 3.2-B.2	Usually on Constellatio Nova coppers (22); C. 4-C (14 lot 289); C. 5-E (23)(13 lot 110).
4.1-B.1	Constellatio Nova (22); C. 5-E (23); C. 4-D (9 lot 34).
4.1-K	Usually on Constellatio Nova coppers; C. 5-E (23).
4.2-R	Constellatio Nova (18 lot 717); C. 4-D (14 lot 293).
5-B.2	Most on Constellatio Nova coppers; C. 5-E (14 lot 290).
10-C	Usually on Constellatio Nova coppers; C. 2-A (14 lot 387); C. 4-C (p).
11-G	Constellatio Nova 5-E (p).
12.2-C	Constellatio Nova frequent; C. 5-E (13 lot 122); C. 2-A or C. 4-C (14 lot 299); Richard Picker records a 12.2-C over a 4.2-R over a Constellatio Nova 5-E (29).
16.3-N	1787 Massachusetts cent Crosby 1-B (22); (13 lot 131).

TABLE III

New Jersey Overstruck Coins

Maris Attribution	Host Coin and (Reference)
17-J	Conn. (21), (28).
17-K	1787 Conn. M. 32.3-X.4 (2 lot 1404); Machin's Mill 1772 6-72A (21). Breen notes that the overstrike was during the late use of the dies (22).
17-b	1782 Irish halfpence (2 lot 1406); 1787 Conn. M. 33.2-ZZ.5 (2 lot 1407); 1774 Louis XVI one sol (2 lot 1408); Nova Eborac (21); Vermont RR-9 (21); 1783 Constellatio Nova (38 lot 1347).
34-J	Conn. (21); Nova Eborac (21); 1772 English halfpence (28).
34-V	Conn. (21); over New Jersey M. 35-J (28); over New Jersey 34-J in turn over Vermont ? RR-16 (36 lot 207).
35-J	Over New Jersey M. 35-W (21); counterfeit English halfpence (36 lot 209).
35-W	Georgius Triumpho copper (21). Breen (22) and Taxay (6) note that all Elizabethtown emissions are overstruck, particularly on Connecticut coppers.
36-J	All overstruck particularly on Connecticut (6).
38-b	Over Connecticut coppers (22).
40-b	Conn. coppers (21); Irish 1/2d. (21); 1780 French sou(25).
56-n	Irish 1/2d. (28); 1782 Irish 1/2d. (11 lot 42); George II English 1/2d. (21); English 1/2d. (28); 1774 English 1/2d. (28); Constellatio Nova (11 lot 44); Nova Eborac (21); Vermont RR-25 (21); Vermont RR-13 (p); Vermont RR-16 or 17 (36 lot 231); Vermont bust right (2 lot 1455); George Clinton copper (21); ? Georgius Triumpho (34 lot 186); 1783 Constellatio Nova C. 3-C (31 lot 595). Machin's Mill imitation halfpence (Vlack attribution): 1772 6-72A (21); 1774 (11 lot 43); 1775 4-75A (21); 1787 17-87A (21); 1787 17-87B (21);; 1787 18-87C (21); 1787 19-87C (p); 1788 23-88A (21); 1787 Connecticut coppers (Miller attribution): 2-B (p); 4-L (21); 11.2-K (21); 30-hh.1 (21); 32.6-X.6 (14 lot 2100); 33.2-Z.5 (21); 33.2-Z.12 (21); 33.34-Z.11 (21); 42-KK.2 (21); 52-G.1 (21). Parmelee Sale (30 lot 428) notes 1785 and 1788 Conn.

TABLE III

New Jersey Overstruck Coins (Continued)

Maris Attribution	Host Coin and (Reference)
57-n	1787 Conn. M. 31.2-r.3 (2 lot 1456).
58-n	Conn. (2 lot 1458); Vermont (?) (21); 1775 English 1/2d. (28); 1775 Machin's Mill 1/2d. V. 4-75A (11 lot 45).
70-x	Counterfeit 1/2d. ? English (21); 1786 Conn. M. 3D-1 (5), (2 lot 1475).
71-y	Conn. (21); 1787 Machin's Mill V. 19-87C (21); George II counterfeit English 1/2d. (2 lot 1476).
72-z	1783 Constellatio Nova 1-A (2 lot 1478).
73-aa	Conn. (21); Spanish four maravedi (21); 1774 English 1/2d. (28); 1787 Conn. M. 33.17-r.1 (14 lot 2095); Machin's Mill imitation 1/2d. (1 lot 34); Nova Eborac Crosby 1-B (p); 1774 Machin's Mill imitation 1/2d. (11 lot 50); Vermont (30 lot 440); Vermont RR-14 (34 lot 206); 1787 Conn. M. 33.9-s.2 (36 lot 245).

TABLE IV

Miscellaneous Overstruck Coins

Attribution	Host Coin and (Reference).
Immunis Columbia	1786 New Jersey (2 lot 605); New Jersey M. 26-S (32 lot 73); Constellatio Nova (33).
George Clinton	Immunis Columbia (2 lot 603).
Machin's Mill imitation 1/2d. Vlack 6-76A	Spanish 8 maravedis (35).

Abbreviated References to Tables I, II, III, IV, Appendix II.

For complete citation of Reference, see Bibliography.

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3. John M. Richardson, "The Copper Coins of Vermont", passim.
4. David Q. Bowers, The History of United States Coinage, passim.
5. Edward Maris, The Coins of New Jersey.
6. Don Taxay, The Comprehensive Catalogue and Encyclopedia of United States Coins, passim.
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17. Morton Collection, Pine Tree Auction Company, Oct. 18, 1975.
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19. Bowers and Ruddy Catalogue #34, Winter/Spring 1980.
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21. William T. Anton, Jr., "A Modern Survey of the Copper Coinage of the State of New Jersey", CNL, 503-513.
22. Walter H. Breen, "Colonial Overstrikes", CNL, 72.
23. Edward R. Barnsley, "Reports, Letters etc.", CNL, 131.
24. William T. Anton, Jr., "TN-87", CNL, 701.
25. Edward R. Barnsley, "Foreign Undertypes of Overstruck Coins", CNL, 61-62.
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28. Norman W. Pullen, Published Price Lists, So. Casco, Maine.
29. Richard Picker, "A Connecticut Double Overstrike", CNL, 395.
30. Lorin G. Parmelee Sale, Bangs, Mervin and Co., June 25, 1890.
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32. American Numismatic Association Sale, Stacks, August 24-28, 1976.
33. Walter H. Breen, "The 'New York' IMMUNIS: A Mystery Unraveled", CNL, 672.
34. The Greater New York Numismatic Convention, Stacks, May 3,4, 1984
35. Eric P. Newman, "English and Bungtown Halfpence", 170.
36. The Richard Picker Collection, Stacks, Oct. 24, 1984.
37. Edward R. Barnsley, "Humdingers and Buzzers", CNL, 50.
38. Mail Bid Sale, Coin Galleries, Feb. 12, 1986.
39. Roy E. Bonjour, "Survey Update" (TN-107), CNL, 920.

GLOSSARY

A. COINOLOGY (Coinage technology): Terms applied to the manufacture of coins (1).

- Punch:** a tool used to impress a letter or other device onto a hub or embossing die.
- Punch linked:** implicating a common relationship between various dies which shared one or more identical punches in their manufacture; two or more dies linked together because some of their letters or devices were impressed by the same punches.
- Hub (hob):** a steel block engraved or punched with a design. The hub is then casehardened and in turn used to impress the design on an embossing die from which the coins are actually struck.
- Complex hub:** a hub which contains all the design features; dies struck from these hubs are usually indistinguishable from each other except for the individual details, such as the date, which are added to the completed die by hand punch.
- Die (or embossing die):** the final casehardened metal block imbued with the completed design produced from various hubs and punches which in turn is used to impress a planchet in the manufacture of a coin.
- Planchet, blank or flan:** a prepared disc of metal which has been impressed with dies to make a coin.
- Cast counterfeit:** a bogus coin produced from a casting mold usually made from impressing a legitimate coin into casting sand from which an impression is taken.
- Struck counterfeit:** a bogus coin manufactured in a coining press with dies.
- Die sinker:** an individual skilled in the art of engraving and producing hubs or dies used in the manufacture of coins.
- Host coin or undertype:** an existing coin which is impressed with different dies to alter its original identity and thus produce a new or overstruck coin.
- Overstruck coin:** the coin which results when an existing coin (host coin or undertype) is impressed with new dies.

B. TERMS FOR COINS OR CURRENCY WHICH CIRCULATED IN COLONIAL AND CONFEDERATION TIMES: Many of these terms have become incorporated into our common language.

- Cut money, sharp change:** the Spanish eight reales which was cut into fractional pieces for small change.
- Bit:** an eighth cut part of a Spanish eight reales or one real; two bits being a quarter part of a Spanish dollar.
- Brummagem or Birmingham:** a general reference to Birmingham, England, the site of many counterfeiting operations, hence the name of the bogus coins, especially coppers, from that place. The word Brummagem has come to have the offensive connotation of "showy and cheap."
- Rap:** counterfeit Irish halfpence, hence something of little value.

Brass: slang for money.

Tin: slang for money; Stephen Foster's character returned from the Camptown

Races with his "pockets full of tin."

Hard coin, money or cash: metallic currency as distinct from paper.

Specie: money in gold or silver coin.

Boodle: a copper Scottish twopence; also bribe money or counterfeit money.

Bawbee: a copper Scottish sixpence.

Rag money: some resembling a rag in terms of low worth, hence depreciated paper money.

Billon: a low grade alloy of silver and copper used in making minor coins which are sometimes washed with silver.

Ecu (Louis d'argent): French crown.

Louis d' or: French gold guinea.

Real: a monetary unit of Spain, Portugal and Brazil; plural is reales (or reals) in Spain and reis in Portugal and Brazil.

Picayune: a one-half real piece, hence any small coin including the U.S. half-dime, or anything very small.

Pistareen: a Spanish two reales coin (little piaster) of inferior silver content worth one-fifth rather than one-quarter of an eight reales.

Piece-of-eight: an eight reales Spanish coin. This coin had multiple names including pieza de a ocho, piaster (piastre), peso duro, escudo de plata, Spanish milled dollar, pillar dollar, etc.

Escudo: the smallest Spanish gold unit, as the real was the smallest silver denomination. Since gold to silver was in a sixteen to one ratio, the escudo was worth two pieces-of-eight.

Pistole: a double-escudo (two escudos); the double-pistole (four escudos) was the original doubloon (doubloon); the quadruple pistole (eight escudos) was later known as the doubloon.

Moidore: basic Portuguese gold series of the seventeenth century or "money of gold" (moeda de ouro) struck until 1732.

Joannes or Johannes: the Portuguese gold series after 1722, or specifically the coin of 12,800 reis or dobra.

Escudo: Portuguese gold coin of the Joannes series of 800 reis.

Milreis (millree): one thousand reis of Portugal or Brazil. This large denomination was used because of devaluation of the Portuguese real.

Crusado: an early Portuguese gold coin, but specifically now a silver coin issued in the mid-seventeenth century. The piece was so named from the cross on the reverse to commemorate the struggle of the crusaders against the Muslims in North Africa.

Dite (doit): a Dutch one-half farthing, hence a trifle.

Stuiver (stiver): a Dutch minor silver coin equal to four dites.

Guilder (gulden, guilden, gilder, florin): a Dutch silver coin of twenty stuivers.

Leeuwendaalder (lion dollar): a crudely made Dutch silver coin of 75% silver content which was widely exported as a trade coin. The value ranged from thirty-eight to forty-two stuivers.

Cross dollar (patagon): a Burgundian rijksdaalder of forty-eight stuivers so named from the crossed cudgels on the obverse.

Rijksdaalder (rix dollar): a Dutch silver coin of fifty stivers (two and one-half guilders).

Ducatoon (silver ryder): a crown-sized silver coin of the Netherlands of sixty stuivers (three guilders).

APPENDIX III

Ducat: any number of European small gold coins. This was first struck in Sicily in about 1150; the Venetian ducat first was minted about 1280 and later became the sequin or chequin, the ducat becoming a money of account. The name ducat comes from the Inscription, "Sit tibi, Christe, datus, quem tu regis, iste ducatus." (Lord, thou rulest this duchy, to thee be it dedicated.)

C. COMMON TERMS FOR SMALL CHANGE:

SPANISH COIN	Four reales, four bits	Two reales, two bits	One real, one bit	Half real, medio, half bit, picayune
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Value of eight reales in local money of account

@ 96 d.

Area: N.Y.,
N.C.

Local Value	48 d.	24 d.	12 d.	6d.
Local Name	4 shillings	2 shillings	shilling	sixpence

@ 90 d.

Area: Md.,
Pa., Del.,
N.J.

Local Value	3 s. 9d.	22.5 d.	11.25 d.	5.6 d.
Local Name			eleven pence or levy	fippenny bit, fip, five penny bit or fippence

@ 72 d.

Area: N.E.,
Va.

Local Value	36 d.	1 s. 6 d.	9 d.	4.5 d.
Local Name	3 shillings	one and six	ninepence	four pence ha'-penny

For generations in Pennsylvania, where the real had passed for eleven pence in money of account, the dime was called a levy and a half-dime a fip (1). In the early United States, when the worn real or bit was roughly equivalent to the U.S. dime, it was christened a "short-bit" and the picayune became the common name for the half-dime.

1. Carothers, Fractional Money, 34-35; see also Simon L. Adler, "Money and Money Units in the American Colonies", The Rochester Historical Society (Rochester, N.Y., 1929) Vol. 9, 143-173. See note 3, page 86.

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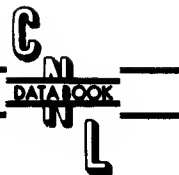
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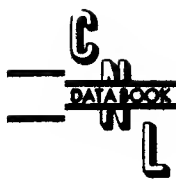
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